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The Economics of Leasing

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ABSTRACT

Leasing may be the most important legal institution that has received virtually no systematic scholarly attention. Real property leasing is familiar in the context of residential tenancies. But it is also widely used in commercial contexts, including office buildings and shopping centers. Personal property leasing, which was rarely encountered before World War II, has more recently exploded on a world-wide basis, with everything from autos to farm equipment to airplanes being leased. This article seeks to develop a composite picture of the defining features of leases and why leasing is such a widespread and highly successful economic institution. The reasons fall under three general headings. (i) Leasing is an attractive method of financing the acquisition of assets, especially for persons who have limited capital or would like to conserve their capital and cash flows for other purposes. (ii) Leasing is a device for minimizing the risks that either lessees or lessors associate with owning assets; although leasing also creates risks, various lease modifications have been developed to manage these derivative risks. (iii) By dividing the rights to an asset between lessor and lessee, leasing permits the parties to specialize in different functions and to solve various impediments to contracting that would be difficult to overcome among separate owners. Understanding the economic advantages of leasing is an important first step in considering possible legal reforms of leasing.

1. INTRODUCTION

This article is about a widespread and highly successful economic institution that has been largely overlooked in both economic and legal literature: leasing. A lease is a transfer of an asset for a limited time in return for periodic payments called rent. The *lessor* is typically the owner of the asset and gets it back after the lease expires; the *lessee* is entitled to use the asset free of interference

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from the lessor during the lease provided the lessee pays the rent and performs the other obligations of the lease.[1]

Leases have existed throughout recorded human history. Examples can be found in ancient Babylonian cuneiform tablets (Ellickson & Thorland 1995, pp. 369–371). The jurists of the Roman empire, through the *locatio conductio rei*, recognized leases of agricultural land, urban dwellings, and personal property (Frier 1980, pp. 56–70; Kehoe 1997, pp. 137–166). In civil law countries, leases came to be regarded as a special form of contract (Chang & Smith 2012, p. 44). In common law countries, leases of land emerged as a form of property; leases of personal property were regarded as a special type of bailment (Bridge 2015, pp. 71–74).

Today, leases are used to acquire the rights to a very wide variety of assets. Resources that are commonly leased include agricultural land, mineral and timber rights, office buildings, shopping centers, industrial and commercial equipment such as ships, aircraft, farm machinery and computers, residences including both freestanding houses and apartments, autos and other motor vehicles, and furniture, among other things. Other than ownership, the lease is probably the most common legal form of holding assets throughout the world.

Although comprehensive data about leasing are not available, a brief glance at such data as exist confirms the very high frequency with which leasing is used, both in the USA and in other developed economies. A large percentage of households lease the dwelling in which they live, and the percentage who lease rather than own has increased since the recession of 2007–2008. In 2019, 31.5 percent of U.S. housing units were occupied by persons who lease, as opposed to owning or living with others (U.S. Census Bureau). In other developed countries the percentages are generally similar, although in Germany and Switzerland more than half the population live in leased dwellings (The Economist 2020, p. 8).

Leases of personal property are also surprisingly pervasive. By one estimate, leases account for more than 25 percent of all new capital equipment in the USA, and approximately 80 percent of all U.S. companies lease some equipment (Gavazza 2010, p. 62). In 1987, a new article—Article 2 A—was added to the Uniform Commercial Code (UCC), in recognition of “the exponential expansion of the number and scale of personal property lease transactions” (UCC 2014–2015, p. 177).

Although also incomplete, the data suggest that equipment leasing is expanding internationally, in many countries by double digit rates annually (White Clarke Group 2017). Auto leasing, in particular, continues to march

1 For a more complete definition see Part 3.

upward, to the point that it may become the dominant form of holding autos in many countries. According to Edmunds, in 2016 "leasing accounted for 32 percent of new retail vehicle sales in the U.S., representing an increase of 41 percent over a five-year period." This is by far the highest rate in history, and "will likely see an even higher percentage" in the future (Edmunds 2016, p. 3). European rates are similar and in many countries appear to be growing by double digit rates annually (Leaseurope n.d.).

It also appears that leasing is an important tool of economic development (Carter 1996). The function of leasing in emerging market economies has received almost no attention in the academic literature. Instead, that literature has focused overwhelmingly on devising ways of financing ownership of capital assets, either through microfinance or formalization of possessory rights (De Soto 2000; Cull & Murdoch 2018). Leasing is especially important in countries with an Islamic background, as Islamic law forbids interest charges on loans, whereas leasing is permitted (Roy 1991). Consequently, leases constitute a large portion of the portfolios of Islamic banks (Iqbal & Mirakor 2007).

Larger trends in society suggest that leasing will continue to expand at the expense of ownership. Leasing entails the acquisition of assets for limited periods of time, whereas ownership entails the permanent acquisition of assets. If, as seems plausible, modern societies will be increasingly characterized by impermanence—of technologies, jobs, places of residence, and households—then the acquisition of assets for limited time periods will likely continue to become, in many contexts, more appealing than that acquiring them permanently.[2]

The ubiquity and utility of leasing as mode of acquiring assets calls for an explanation in terms of the economic functions it performs. There is, however, no general analysis, in either legal or economic literature, that seeks to explain why leasing is such a widespread and successful institution. The legal literature is overwhelming devoted to one type of leasing—residential tenancies—and within this narrow band is largely concerned with the plight of low-income tenants. For example, there is a nontrivial body of articles on whether a nondisclaimable implied warranty of habitability is beneficial or harmful to low-income tenants (Super 2011, pp. 398–423). Standard textbooks on property pay little attention to commercial real estate leasing and ignore completely the exponential growth of personal property leasing.

The economic literature presents a different picture. There are a significant number of economic studies that address some aspect of leasing, such as sharecrop leases or business equipment leases or the effects of rent control. Often these appear in finance journals or specialized journals devoted to real estate,

2 The Economist (2020, pp. 8–9) notes that "many millennials desire 'asset light' lives in which they rent cars, music and clothes, rather than owning them" and dubs them "Generation Rent."

and typically they address or take as their model only one leasing market. With rare exceptions, they do not attempt to analyze leasing as a general phenomenon. Many of these studies contain important insights, and I have drawn upon them in developing a composite picture of the economic reasons for leasing. But to date the economists, like the lawyers, seem uninterested in trying to understand leasing as an institution or why it is so frequently chosen as a mode of holding assets across multiple markets.[3]

The article begins in Part 2 by reviewing the wide range of markets in which leasing is common. Part 3 distils a general definition of leasing, drawing upon commonalities among the many different markets in which leasing exits and on recent efforts of the UCC and the Financial Accounting Standards Board to define leases for legal and accounting purposes. Part 4, which is the heart of the article, seeks to fill a gap in the existing literature by developing a synthesis of the economic reasons why persons prefer to lease assets rather than hold them in some other form. Part 5 briefly considers some implications of the economic account for potential reforms of leasing.

2. THE WORLD OF LEASING

Leasing is a very flexible mode of holding assets. Not surprisingly, therefore, leasing is used with a wide range of assets and performs a wide variety of functions. This Part offers a brief overview of the types of assets that are frequently leased. Leases are an important mode of holding assets in the context of both immovable resources (land and fixtures) and movable resources (personal property).

With respect to land, one occasionally encounters so-called ground leases, in which land is leased for a long period of time with the expectation that the lessee will construct one or more structures on the land and will own these structures (at least for the term of the lease). The motivation for executing a ground lease may be that the owner of the land is interested in a stable return without the management responsibility of constructing and managing structures, or the owner may face large capital gains taxes if the land were sold or may face impediments to selling the land set forth in trust instruments or positive law (Hecht 1972, pp. 626–639).

3 The best functional analysis of the reasons for leasing I have discovered in the existing literature, which is limited to the context of real estate leasing, is Benjamin, De la Torre, & Musumeci (1998). *See also* Isom and Amembal (1982, pp. 1–17) (discussing factors affecting the "popularity of leasing"); Merrill and Smith (2017, pp. 641–646) (offering an abbreviated account of some of the factors developed herein).

Far more common are leases of land for extractive or agricultural purposes, which can be found in nearly all legal systems. In England, courts began to recognize the term of years and other forms of agricultural leases in the thirteenth century. These were not regarded as freehold estates, but soon gained judicial protection as interests in land (Simpson 1986, pp. 71–77). In civil law systems, leases of land have long been recognized as a specialized form of contract (*contrat de louage*) (Potheir 1771; Chang & Smith 2012, p. 44).[4] Modern legal systems recognize variations on the full-blown agricultural lease, such as leases limited to the pasturing of animals.

Leases permitting extraction of particular resources from land are also very common. Private landowners frequently enter into timber, mineral, or oil and gas leases, primarily to take advantage of the expertise of specialized lessees (Brown, Fitzgerald, & Weber 2016). Extractive leases are especially important with respect to government-controlled land. The U.S. Government effectively owns almost one-third of the land mass of the USA (Vincent 2017), as to which public sentiment has for some time opposed any further disposition by sale (Sax 1983). In order to obtain some economic return from this vast domain, the government enters into leases of various kinds, such as for extracting oil and gas, mining surface minerals like coal and gravel, timber harvesting, and grazing livestock (Vincent 2014). At the state level, land obtained from the federal government to promote education has also been developed through leasing (Fairfax 1992, pp. 848–849).

Leases of land improved by structures are of course ubiquitous, with the rights to occupy all or part of the structure often more important to the lessee than any interest in the underlying land. Leases of space for commercial offices, for retail space in shopping centers, and for warehouse and light industrial space are extremely common and of great economic significance. Leases of space for residential occupancy, including apartments, townhouses, and free-standing homes are familiar and obviously economically important. And a large industry has emerged in recent years providing so-called self-storage units, which are leased, for persons and businesses in transition from one place or situation in life to another (Sisson 2018).

Very short-term occupancy of physical space—historically called "lodgings" and here referred to as rentals—are usually regarded as purely contractual arrangements rather than leases (Friedman 2016, § 37:3). Examples range from hotel or Airbnb lettings to rentals of luggage lockers in bus or train stations.

4 Civil law systems, following Roman law, recognize an interest called the usufruct, which gives the usufructuary the right to plant and gather fruits or crops on land owned by another but no right to alienate the land. This has been seen as a precursor of the lease, but is probably more accurately analogized to a life estate (McClean 1963).

The line of division between rentals and leases is somewhat indistinct and turns on factors such as the degree of control the occupant exercises over the space and the level of services provided by the owner (Tiffany 1910, § 3.7; Yale Comment 1955). A month-long occupancy of a hotel room would presumably fall on the rental side of the line, whereas a month-to-month occupancy of a furnished apartment would fall on the lease side.

Leases of personal property also have a very old pedigree. Early English treatises, following Roman law, called these arrangements "letting and hiring" (Glanville 1189, p. 132; Bracton 1220–1230, pp. 183–84). The decisional law considering these types of leases was extremely thin up through the middle of the twentieth century, with the result that treatises on bailments were the primary source of understanding their legal status. Judging by the examples given in the treatises, the most common type of personal property lease in this era was the hiring of a horse or some kind of horse-drawn vehicle (Story 1870, p. 396; Dobie 1914, p. 105; Elliott 1929, p. 70). Starting in the 1950s and accelerating ever since, personal property leasing has exploded in volume and significance, and now covers a wide array of movable equipment–everything from office furniture and cars to farm equipment (Tita 2019), shipping containers (Wu & Lin 2015, p. 12), and jumbo jets (Gavazza 2010).[5]

As in the case of occupancy of immovable spaces, very short-term procurements of movable resources are regarded as rentals rather than leases. Thus, renting a car from Hertz or Avis is regarded as a contractual arrangement, whereas leasing a car through a car dealer for a term of three years is regarded as a lease.

Certain types of movable property have a more robust history of leasing that pre-dates the modern personal property lease, and consequently are governed by specialized bodies of law. Leases of ships are called charter-parties, and are governed by the law of admiralty (Gilmore and Black 1975, pp. 193–197). Charter-parties come in three types: voyage charters, time charters, and demise or bareboat charters. The main difference is that in voyage and time charters both the vessel and the crew are supplied by the vessel owner; in a demise or bareboat charter the owner supplies the vessel and the charterer procures the crew. Although the terminology and details differ from the law that applies to other types of movables, voyage and time charters roughly correspond to what are here called rentals and demise charters correspond to full-blown leases.

Railroad freight cars constitute another specialized mode of temporary transfer of movable property that pre-dates the rise of the modern personal property lease. In the early days of railroading, each carrier built and owned its own cars. Soon, however, the practice developed of routing cars that originated

5 A good overview is provided by Schroth (2010).

on one line over one or more interconnecting lines if this was the most efficient way of providing through service. The railroads agreed to pay each other "per diem" charges for these borrowings of rail cars owned by another carrier. Starting with the Esch Car Service Act 1917, the Interstate Commerce Commission was given authority to regulate these charges.[6] Today, rail cars are variously owned and hired out by operating railroads, shippers, large car leasing companies, and individual investors (Corsi, Casavant, & Graciano 2012). Bar codes painted on the sides of cars identify the car owner and the applicable per diem rate, which can be scanned electronically. A sophisticated accounting system then nets out the lease charges among the various actors.[7]

3. WHAT IS A LEASE?

This article proceeds on the premise that there are features that characterize all leases and, at least implicitly, differentiate them from other modes of holding assets. The survey of leasing markets in Part 2 offers important clues about those features: (i) Leases apply to tangible (i.e., physical) property. If one acquires a partial interest in an intangible asset, like a financial asset or intellectual property, it will not be called a lease. (ii) Leases are a commercial instrument. They are not used to make gifts or to distribute assets on death. It is rare, if not impossible, to find reported cases in which a lease is created with no expectation of consideration in return. (iii) Leases always have a time limit. Some may be very long, like ninety-nine-year ground leases, and occasionally even longer.[8] But one does not encounter leases that last indefinitely or for a potentially infinite time, which is characteristic of ownership. (iv) Leases convey both possession and the right to use an asset. In this respect, leases are different from both security interests and typical bailments. Security interests convey no right to use the asset but only to sell it in the event of default. And although the typical bailment for repair, transportation or storage of an asset conveys the right to possess the asset while these functions are being carried out, they do not convey the right to use the asset in the manner that an owner can use an asset.

To these generalizations, we can add the recent efforts by nonjudicial actors who have been required to develop explicit definitions of a lease. One such

6 See 24 Stat. 379 (1917). The current version is at 49 U.S.C. §11122. For a prominent dispute over setting per diem rates, *see United States v. Florida East Coast Ry.*, 410 U.S. 224 (1973).

7 For the history of the railcar bar-codes, which are called "KarTrak," see http://www.a2btracking.com/wp-content/uploads/2012/04/Newsletter-Winter-2011.pdf.

8 The Guiness Brewery in Dublin sits partly on land that was originally conveyed in a lease executed in 1759 for 9000 years at a fixed rent of £45 per year. en.wikipedia.org/wiki/Guiness_Brewery.

effort is associated with the adoption of Article 2 A of the UCC. A primary motivation for the addition of the new Article was the need to distinguish a lease from a security interest (Boss 1988). Security interests in personal property are governed by Article 9 of the UCC, which sets forth a number of requirements for perfecting a valid security interest, such filing the interest in a registry of rights. In part to avoid these requirements, but also because leases are generally treated more favorably in bankruptcy than are security interests, creditors have sought to characterize what might otherwise be regarded as a security interest as a lease.[9] Hence they felt need of the drafters of the UCC for a definition that would distinguish personal property leases from security interests.

The critical distinction adopted by the drafters of the UCC is whether the transaction in question conveys an interest in personal property for a term "equal to or greater than the remaining economic life of the goods."[10] If the entire "economic life" is transferred, the transaction is deemed a sale and the interest of a creditor in the asset is a security interest. If the transfer is for less than the economic life of the asset, the transaction is considered a lease. Thus, the UCC emphasizes that the defining feature of a lease is a transfer of an asset for a period *less than its economic life.*

Another effort to define a lease is reflected in a new accounting standard adopted by the Financial Accounting Standards Board (FASB) in an effort to reduce the use of leases as a way of concealing off-balance sheet risks of firms. A long-standing challenge for the accounting profession has been whether to require that lease obligations to appear on a balance sheet or only on an income statement. The accounting profession first responded to the challenge in its Statement of Financial Accounting Standards No. 13 (SFAS 13), adopted in 1976. This divided the world of leases into "capital leases" and "operating leases" (Dieter, Stewart, & Underwood 1980). Capital leases were treated like sales of assets (and thus had to be recorded on the lessee's balance sheet as an asset and any loan to secure the asset had to be recorded as a liability); operating leases were reflected only on income statements. Capital leases were distinguished from operating leases by a series of bright line tests designed to identify transactions in which ownership of the asset was effectively transferred to the lessee. For example, if the lease term was for 75 percent or more of the estimated economic life of the asset, it was a capital lease; alternatively, if the present value of the rental payments was equal to 90 percent or more of the fair market value of the asset it was a capital lease.

9 On the differential treatment of leases in bankruptcy, *see* Part 4.1.3.

10 U.C.C. § 1-203(b)(1). The full provision is more complex, creating four alternative conditions that cause the transaction to be characterized as a security interest; still, each of the conditions functionally equates to creating a right to use the asset for its full economic life.

The bright line tests of SFAS 13 led to much gamesmanship, with firms manipulating lease terms to fall on the "operating lease" side of the divide in order to avoid booking lease obligations on their balance sheets (SEC Report 63; Weidner 2000; Luppino 2003). In the Sarbanes-Oxley Act of 2002 Congress directed the Securities and Exchange Commission to conduct a study of "off balance sheet" financial liabilities, including leases.[11] The Commission study recommended that the FASB re-examine its accounting standards for leases. After much controversy, the FASB adopted new standards for accounting for leases that go into effect in 2019 and 2020 (Weidner 2017). The new standards apply to all types of leases lasting more than one year, including both real and personal property leases. The new standards feature a definition of "lease" that no longer focuses on whether the lessee has obtained effective "ownership" of the underlying asset, but rather on whether the lessee has obtained control over the use of the asset.[12] Thus, a lease is defined as a contract "that conveys *the right to control the use of* . . . *an identified asset* . . . for a period of time."[13] All leases so defined that last more than one year must now be recorded on the lessee's balance sheet as an asset (the asset being the right to use the asset for the period of the lease) and a liability (the liability being the requirement to pay future rents).[14]

Both the UCC's definition of a lease as distinct from a security interest and the new definition of lease adopted by the FASB are important pieces of data in determining the practical understanding of market participants as to what constitutes a lease. These definitions emerged out of extensive deliberation by lawyers (in the case of the UCC) and accountants (in the case of the FASB) who have dealt extensively with transactions in which the question whether something is a lease as opposed to something else has been critical. The understandings they have distilled thus presumably capture important aspects of what the participants in these transactions regard as true leases. One can say they constitute important precedents, albeit different from what we ordinarily think of as

11 Sarbanes-Oxley Act, § 108, 401(c)(1)(A); 15 U.S.C. § 7218, 7261 (2012).

12 Financial Accounting Standards Board, Accounting Standards Update No. 2016-02, Leases (Topic 842) (Feb. 2016) (ASU 2016-02), *adding* Accounting Standards Codification 842 (ASC 842).

13 ASC 842-10-15-3.

14 With respect to income statements the distinction between capital leases (now called finance leases) and operating leases was retained by the FASB, so that lessees that have operating leases may continue to deduct rental payments as expenses as they come due. In contrast, the International Accounting Standards Board, which worked closely with the FASB on drafting the new standards, as recommended by SEC Report (106-07), applied its new standards to both the balance sheet and the income statement. Int'l Accounting Standards Bd., IFRS 16, Leases para. 51 (January 2016). At this point, it is impossible to know whether or to what extent the new accounting rules will affect the incidence of characterizing transactions as leases as opposed to purchases of assets. Because the FASB's new standards apply only to the proper accounting treatment for financial reporting purposes, they do not necessarily dictate the accounting treatment for tax purposes (Weidner 2017, n.2).

a legal precedent. Given the economic stakes in these efforts, and the intensity of the scrutiny given to the authorities' proposals by interested parties,[15] these precedents may be particularly persuasive in developing a more general understanding of the general features of a lease.

We are now in a position to identify the common features of leases, drawing on the characteristics of leasing in various markets (by one name or another) as well as the efforts of the drafters of the UCC and the FASB to distinguish leases from security interests or sales of assets. In effect, the definition should be regarded as a distillation of the common features of a lease as drawn from practice. This is the composite definition: *A lease is a transfer of possession and use of a physical asset for a time less than its expected useful life in return for economic consideration.* A few words of clarification about different features of the definition:

Transfer of possession. A lease is generally differentiated from short-term rights to use assets, which can be called rentals. Rentals share many economic features with leases, including having a duration less than the useful life of the asset and transferring the residual rights associated with the asset to the renter for the duration of the rental.[16] The difference is that rentals are not regarded as transferring *possession* of the asset to the renter, and instead convey only a temporary license. There is a gray area between rentals and leases, involving things like rentals of furnished vacation homes for the season. The concern here is with transfers that are unambiguously leases, meaning the lessee is regarded as the one in possession of the asset for the duration of the lease. Being in possession, the lessee has standing to sue under the various torts that protect possessors against interference by third parties, namely, trespass, nuisance, trespass to chattels, and conversion (Prosser & Keeton 1984). Under a rental, in contrast, the rental agency is deemed to remain in "constructive possession" (or more accurately, has a right to possession superior to the renter) and thus has the right to bring legal actions to protect the asset against interference by third parties.[17]

Transfer of use. A lease entails not just the transfer of possession of the asset to the lessee but also the right to control the *use* of the asset for a range of discretionary purposes as determined by the lessee. A lease gives the lessee the

15 The proposal to require lessees to book lease obligations on their balance sheet was subject to a major challenge by the U.S. Chamber of Commerce, which in turn spurred a major counter-attack (Weidner 2017, pp. 376–379).

16 On the concept of residual rights, *see* Part 4.2.1.

17 In legal terms, the rental company has a right to possess the asset that is superior to the renter's actual but temporary possession of the asset. In rentals of real property (hotel rooms, Airbnb rentals) the renter's interest would be characterized as a license. In rentals of movable assets (autos, carpet cleaners), the renter's interest would be characterized as a bailment.

right to use the asset in essentially the same way an owner can. In this respect, a lease differs from a typical bailment in which possession of an asset is transferred from bailor to bailee for a specific purpose such as repair, storage, or transportation. In such a bailment, the transferee has possession of the asset but does not have the right to use the asset except for the purpose designated, explicitly or implicitly, by the bailor.

Physical asset. Leases always entail the transfer of physical (tangible) assets. When rights to use intangible assets are transferred this is typically called a license. It may be that certain exclusive licenses of intellectual property are functionally similar to leases, but the inquiry here is confined to leases, which exist only in the world of physical assets.

Time less than the expected useful life of the asset. Leases are always for a limited duration, as distinguished from ownership, which lasts for an indefinite time. The limited duration of a lease, as a matter of practice, is always for a time less than the expected life of the asset. The functional significance of this is that the owner who creates the lease—the lessor—retains a residual interest in the asset called a reversion. Leases therefore always entail divided rights in the asset. The lessee has a present possessory interest and the lessor has the reversion.

Consideration. Leasing is a commercial institution. Even if in theory one could make a gift or bequest of an asset in the form of a lease, one never sees this in practice.[18] Under a lease, the asset is transferred in return for the payment of rent. This is nearly always in cash, although in some agricultural leases rent is paid in the form of a percentage of output (sharecropping). Rent is most commonly paid periodically, typically but not invariably monthly. Occasionally, rent is paid in a single lump sum payment at the beginning of a lease.[19] Under the dominant practice, however, leases take the form of a relational exchange in which the lessor transfers possession and use of an asset to the lessee for a limited time and the lessee during that time periodically pays rent to the lessor.

For purposes of considering the economics of leasing, this article draws no distinction between real property leasing (immovables) and leasing of personal property (movables). The assumption is that the economic logic of leasing is sufficiently similar in both contexts that leasing can be examined as a unitary institution.

18 If one makes a gratuitous transfer of real property—such as telling a friend he can use your apartment over the winter holiday season—this would be classified as a license rather than a lease. If one makes a gratuitous transfer of personal property—such as telling a friend she can use your bicycle for the summer—this would probably be classified as a gratuitous bailment rather than a lease.

19 Evidently, this is the practice with respect to cash-rent agricultural leases. With respect to sharecropping leases, rent is paid in a lump sum after the crop is harvested (Allen and Lueck 1992, pp. 404–405).

4. WHY LEASE?

Leases, like other forms of holding interests in assets such as full ownership (called the fee simple in Anglo-American law in the case of land), the trust, the bailment, and the license, perform multiple economic functions. Sometimes the parties will enter into a lease, rather than structure their relationship using some other form, because they are interested in only one of these functions. Other times they will be motivated by multiple functions. Understanding the economic functions performed by leases is of intellectual interest in explaining why leasing is such a widespread and growing phenomenon. Such an understanding is also of practical value insofar as it can help guide courts in resolving lease disputes and inform legal reformers in developing proposals to clarify or revise lease law.

4.1 The Lease as Financing Device

The first function of leases is as a financing device. One can think of a lease as an arrangement in which one party—the lessor—loans some asset to the other party—the lessee—in return for payment. The payment, which is typically periodic, is designed to compensate the lessor for the opportunity cost of the resource, just as in the case of any type of commercial loan. In a loan of money, we call the charge for the opportunity cost of the funds "interest." In a lease of physical assets, we call it "rent."

4.1.1 The Irrelevance Theorem

The function of the lease as a financing device is highlighted in a small (and now rather outdated) literature in finance economics on the lease-or-purchase decision of business firms in acquiring business equipment. Borrowing from the Modigliani–Miller theorem in corporate finance (Modigliani & Miller 1958),[20] this literature posits that under a rigorous set of assumptions, the costs to a firm of leasing an asset will be the same as the cost of borrowing money to purchase the asset (Miller & Upton 1976; Myers, Dill, & Bautista 1976). The assumptions that yield the irrelevance theorem in the lease-or-purchase context, in a fashion analogous to the assumptions underlying the original Modigliani–Miller theorem, are quite stringent. They include the assumptions that: (i) capital markets are accessible to all lessors and lessees and function costlessly; (ii) there are no differential transaction costs associated with acquiring or disposing of assets either by lease or purchase; (iii) there is no risk of default under either leases or secured lending; and (iv) tax laws create

20 The theorem posits that the total cost of capital to a firm will be the same without regard to the relative portion of debt and equity (Modiglianai and Miller 1958).

no distortions that affect the return to firms depending on whether assets are acquired by lease or purchase.[21] The assumptions are obviously unrealistic. The irrelevance theorem is a thought experiment designed to highlight possible reasons why a firm would acquire assets by lease as opposed to purchase, namely, that one of or more of the assumptions is not met.

Before saying some reasons why the irrelevance theorem almost certainly does not apply to most leases, it is necessary to praise it for what it establishes. The most important thing the theorem establishes is that leasing is a method of financing the acquisition of assets. The decision to lease an asset is an alternative to borrowing funds to purchase the asset. Indeed, if the assumptions of the theorem hold, they are an exact substitute. The theorem also tells us that leases inevitably contain an expected return or profit for the lessor, reflecting the opportunity cost of transferring possession and use of an asset to another person or entity.

In the finance literature, the most commonly discussed source of deviation from the irrelevance theorem is tax law (Schall 1974; Wolfson 1985; Lewis & Schalheim 1992). In the standard commercial lease, there is no tax advantage to leasing as opposed to owning an asset. This can be shown by hypothesizing that the decision to lease or finance is fully internalized to a single firm. Suppose a firm would like to acquire space in a small office building. If the firm borrows money to construct the building it will occupy, it can deduct as a business expense the interest payments on the loan and depreciation on the building—one interest deduction and one depreciation deduction. Alternatively, the firm can create a wholly-owned subsidiary (Bildco) to borrow money to construct the building, which Bildco will then lease to the firm. Bildco can deduct the interest payments on the loan and depreciation on the building. In addition, the firm can deduct the rental payments made to Bildco as a business expense. But Bildco will have to declare the rental payments as income. So the deduction of the rental payments and declaration of the rental payments as income exactly offset each other. The result for the integrated firm is one interest deduction and one depreciation deduction—just as under the ownership option.

Leasing will generate tax advantages only under special circumstances. For example, a firm may not have enough income to take full advantage of the deductions for interest expense and depreciation. In such circumstances, it

21 Miller and Upton (1976, pp. 763–764) offer a slightly different version of the assumptions that yield the irrelevance theorem: (i) the "machines in question" are produced by a perfectly competitive industry at a constant cost per unit per time period; (ii) maintenance and repair is handled by mandatory service contracts offered by a competitive services industry in both markets; (iii) "[s]econd-hand machines can be bought, sold, or sublet by leasing companies in unlimited quantities in perfect markets"; (iv) leasing companies can borrow or lend indefinitely in a perfect capital market at a known one-period rate of interest; and (v) leasing is a business that anyone is free to enter and requires the use of no real resources.

may be to the advantage of the firm to identify another entity that can take full advantage of these deductions, which will then lease the asset to the firm. Assuming the lessor shares some portion of these tax savings with the lessee in the form of lower rent, the lessee may be able to acquire the asset by leasing at a lower cost than if it purchased the asset.

These sorts of tax considerations undoubtedly have an important influence on decisions to lease or purchase. This article, however, is concerned with the substantive economic reasons, other than accounting or tax reasons, for entering into leases. Accounting standards and tax laws differ from one category of asset to another, from one era to another, and from one legal regime to another. For example, Hansmann has discussed how U.S. tax law has at different times favored leasing apartments and at other times has favored owning them as condominiums (Hansmann 1991). Similarly, Gavazza concludes that tax considerations cannot explain the fact that roughly half of all commercial aircraft owned and half are leased, with most carriers holding a mix of each (Gavazza 2010, pp. 80–82). And leasing is growing throughout the world, notwithstanding significant diversity in the tax treatment of different types of assets. So accounting and tax laws cannot be the whole explanation for leasing. This article seeks to understand the economic reasons for leasing, other than tax and accounting conventions.

4.1.2 Get Less/Pay less

The major advantage of leases as a financing device is that they allow assets to be acquired at lower cost. The irrelevance theorem takes as its implicit model a well-capitalized business firm deciding whether to acquire equipment by lease or purchase. This makes its stringent assumptions more plausible, but equipment leasing by well-capitalized firms represents only a small subset of the world of leasing. If we extend the inquiry to encompass other types of leases, such as residential leases, consumer product leases, agricultural leases, and leases of real estate and equipment by small businesses and farms, the assumption that all persons have ready access to perfectly functioning capital markets is obviously implausible. Leases have always been, and continue to be, a type of financing device preferred by persons who are constrained by their lack of access to capital markets. This can be either because they have not accumulated enough savings or investment capital to purchase the asset outright, or to satisfy the conditions required to obtain a purchase-money loan, or because they do not anticipate future cash flows sufficiently large to repay a loan.[22]

22 Leasing is also a device for financing the acquisition or retension of assets when lending is barred by religious laws that condemn charging interest, as under medieval Christianity (Plunkett 1956, p9. 572-573) or contemporary Sharia law (Roy 1991).

The basic reason why leases are favored by those who lack access to capital markets is obvious on reflection, but makes only a rare appearance in the finance literature. When one leases an asset, one gets less than when one purchases an asset (Nunnally and Plath 1989, p. 386). Leases entail the acquisition of an asset for a limited time less than the useful life of the asset. A purchase entails the acquisition of an asset for its full useful life. When one gets less, one pays less. Thus, persons who are constrained by a lack of savings or investment capital, or who have limited cash flows, may prefer to lease rather than purchase because it reduces their costs of holding an asset (Lin et al. 2013). By leasing, they conserve their limited capital for other purposes, or they conserve their anticipated cash flows for other purposes.[23]

To illustrate, consider a person contemplating the acquisition of a new automobile. Assume a new auto has an expected useful life of ten years, and that it will yield 1,000 units of use value per year for each year of its life. If someone leases the vehicle for three years, they obtain three years' use (3,000 units). If they purchase the asset, they obtain ten years' use (10,000 units). It will inevitably cost less to acquire the vehicle for three years than to acquire it for ten. This will be true even if we discount the use values (1,000 units per year) to present value using some discount rate. The discounted present value of three years' use (years 1–3) will still be significantly less than the discounted present value of ten years' use (years 1–10).[24] Consequently, the cost of leasing the asset for three years will be less than the cost of acquiring the same asset for all ten years—no matter how the payments are structured.[25]

For the capital or cash-flow constrained person this is of obvious significance. Such a person might prefer to own the asset rather than lease it, perhaps because they value the prestige of owning things, or this would provide them

23 There is evidence that if one wants to purchase an assert for its full useful life, borrowing money to purchase the asset under a purchase money loan results in lower total payments than acquiring the asset under a series of leases (Eisfeldt and Rampini 2009, p. 1622). The authors suggest this is because of higher monitoring costs incurred by the lessor to protect the value of its reversion in the asset (1630). This is not inconsistent with the get less/pay less postulate, which simply says that lessees pay less because they acquire the asset for less than its full useful life.

24 At a discount rate of 4 percent, the present value of three years' use value would be 2775, while the present value of ten years' use value would be 8111. At a higher discount rate, such as 8 percent, the difference would be smaller but still pronounced: the present value of three years' use value would be 2577, and the present value of ten years' use value would be 6710.

25 A recent internet advertisement from CarsDirect illustrates. *See* https://www.carsdirect.com/2019/chevrolet/malibu. The ad states that one can lease a new Chevrolet Malibu for 36 months for $308 per month, or one can purchase the same car by making payments over 36 months for $533 per month. The financed price is $225 more per month than the lease price, which reflects the fact that under the first option one is acquiring three years' of use, and under the latter option one is acquiring the full useful life of the vehicle.

more security, or simply because they prefer more to less. But on balance, they would rather preserve their capital and or cash for other purposes, precisely because they face budgetary constraints in these respects. Thus, they prefer to acquire less of the asset (in terms of the time they have it) and leave more of their limited resources for other things.

The significance of get less/pay less is not limited to low income and net worth households and small business firms. It also means that leases are a form of leveraging limited capital for investment purposes. Consider an individual who wants to start a restaurant. This individual may have saved enough to make a down payment to purchase a building for a restaurant. But devoting their capital to purchasing space for the restaurant may not be the best use of limited funds. It may make more sense to lease space for the restaurant, and conserve the capital for acquiring kitchen equipment, tables, and chairs. Or, it may make even more sense to lease the space, *and* lease the kitchen equipment, tables, and chairs, and conserve the capital for initial marketing efforts and as a reserve fund to pay the wages of employees during the startup phase. Similar points can be made about law firms in deciding how to acquire space for their offices, chain stores in deciding how to acquire space for additional outlets, and airline companies in deciding how to expand their fleet of planes. Leases allow persons to leverage their limited resources in roughly the same way that borrowing allows persons to leverage limited resources, except that when one leases assets, the cost of acquiring the asset will be lower, because it is being acquired for less than its useful life.

A hard-core adherent of the irrelevance theorem can object that if one wants to acquire less of an asset, in terms of the time one holds an asset, one can simply purchase the asset and then re-sell the asset when the desired time period has expired. But this assumes all parties have full access to capital markets and that there are no differential transaction costs associated with different modes of acquiring and disposing of assets. When these assumptions do not apply, because the person who is contemplating acquisition of the asset is constrained from accessing capital markets and/or it is more costly to purchase and re-sell assets than to lease them, the irrelevance theorem no longer applies.

4.1.3 Enhanced Security for Lessors

A secondary advantage of leases as a financing device is that they provide greater protection for lessors in event of default than is provided to lenders holding security interests in a purchased asset. In both cases, the primary concern is nonpayment. Lessors have better protection against nonpayment than do lenders holding security interests. Here too we see a significant divergence from the assumptions of the irrelevance theorem.

There are multiple mechanisms for dealing with the risk of default. One is to adjust the rate of interest or the rent to account for the risk of default (Schallheim 1994, p. 26; see also Benjamin, De la Torre, & Musumeci 1998, p. 226). Another is to require a large down payment or security deposit from the acquirer. On both scores, leases provide little or no advantage to the party that provides the financing of the asset; indeed, if anything leases are characterized by comparatively small security deposits relative to the substantial down payment traditionally required to obtain a secured loan.[26] Where leases have a comparative advantage is in respect of the third source of protection: the ability to seize the asset in the event of default.

The superior ability to seize assets from defaulting lessees is to some extent built into the structure of leases. Leases are for a limited time less than the useful life of the asset. Hence when the lease expires, the lessor is entitled to get the asset back. There is, if you will, a built-in limit to the time in which a lessee can remain in default. When the term expires, the lender can get a judgment for possession, no questions asked.[27] No such time limit applies to a secured lender dealing with a debtor in default. The debtor has title to the asset for its full useful life. The lender can recover possession only by securing a judgment that the debtor is in default and then using appropriate means to force a sale of the asset (Committee on Mortgage Law and Practice 1968, pp. 413–415; Mattingly 1996, p. 80). The automatic recovery of possession based on the expiration of the lease term is particularly useful in the context of high-risk residential leases, which are often month-to-month. Here the maximum waiting time to regain possession is roughly thirty days.

Another source of the lessor's advantage in regaining possession from defaulting lessees is based on social norms and legal conventions that make it easier to recover possession from lessees than from owners in default on loans. As a generalization around the world, it appears that lessors can recover leased

26 Leases typically require a security deposit equal to one or two period's rent. Many states have limitations on the amount of the security deposit which a landlord can require from a tenant, generally one or two months (Schoshinski 1980, §6:41; see the Cumulative Supplement for a list of the limits in the various states). The Uniform Residential Landlord Tenant Act generally restricts security deposits to two times the periodic rent. Unif. Residential Landlord and Tenant Act 2015 § 1201. New York's new rent control law establishes a maximum of one month's rent. Housing Stability And Tenant Protection Act, 2019 N.Y. Ch. 36 (S. 6458) (McKinney's NY Gen. Oblig. § 7–108 1-a(a). Security deposits are often much higher in other countries (Hutchinson, Adair, & Park 2010, p. 254). With respect to downpayments, regulations of the federal mortgage insurance entities (such as Fannie Mae and Freddie Mac) require that mortgagors obtain private mortage insurance if a downpayment lower than 20 percent is specified (Jones 3).

27 "At common law, a landlord could evict a tenant after the lease terminated for any reason or for no reason" (Rabin 1983, p. 533). Today, however, there are several doctrines which limit this common law right in the context of residential leases, including retaliatory eviction and just cause eviction statutes (*id* and Schoshinski 1980, § 2:9).

property more easily than mortgagees can foreclose on mortgages. This is probably due, in significant part, to the intuition that the lessor is "the owner" of the property, and hence is entitled to get it back when the lease term ends or the lessee defaults.[28] With respect to real property in the USA, leasing has a clear comparative advantage over mortgage lending in this respect. Foreclosure of mortgages is encrusted with all sorts of legal constraints, such as mandatory notices, hearing requirements, fiduciary duties in conducting sales, and redemption rights (Committee on Mortgage Law and Practice 1968, pp. 413–415; Johnson 1993; Nelson & Whitman 2004). All of which greatly depresses the value of the collateral in the event of default, by some estimates as much as 40 percent of the original loan amount (Mann 2017, p. 80).

In contrast, when a lessee defaults on payment of rent for real property, the lessor can typically declare a forfeiture of the lease (Friedman 2016, §16.13; Schoshinski 1980, p. 377). Lessors can then either use self-help to regain possession (e.g., change the locks) or can obtain a forcible entry and detainer judgment followed by an eviction carried out by the sheriff's office. Thus, the lease includes a built-in security device in the form of forfeiture of the property for nonpayment of the rent, which is likely to be quicker and cheaper than foreclosure of a mortgage.

The advantage of leasing in recovering possession may not be as great in the case of movable property. This is because the UCC, in effect in forty-nine states, permits self-help repossession of personal property subject to a security interest, provided it can be done "without breach of the peace" (McRobert).[29] If the jurisdiction adopts a broad definition of peaceable repossession, the cost of recovering personal property used as security for a loan is likely to be similar to the cost of recovering personal property which has been leased.

A third advantage involves the relative position of the lessor and the holder of a security interest when the defaulting holder of the asset is insolvent, as will commonly be the case.[30] Under U.S. Bankruptcy law, an insolvent lessee must make an election relatively soon after filing for bankruptcy either to confirm or

28 Admittedly there is national variation here. Landlord-tenant law in France, for example, makes it very costly for landlords to evict tenants either for nonpayment of rent or for holding over at the end of a lease term (Ellickson 2012). Similar laws could be adopted in the USA or other countries, or could spread to other markets where leasing is used, such as commercial real estate, autos, and business equipment. Adoption of costly eviction or repossession laws would reduce the cost advantage to lessors of using leases as a form of security for payment.

29 U.C.C. §9-609(b). See, e.g., Williams v. Ford Motor Credit Company, 674 F.2d 717 (1982).

30 On the differential treatment of leases and security interests in bankruptcy, see generally Hemel (2011 and sources cited); United Airlines, Inc. v. HSBC Bank USA, 416 F.3d 609 (7th Cir. 2005) (Easterbrook, J.).

reject the lease.[31] If the lessee elects to confirm the lease, then all payments in default must be corrected and the lessee must agree to comply with all existing terms of the lease going forward.[32] In effect, the lessor gets a super-priority relative to other creditors, and is immune from taking any kind of haircut. If the lessee elects to reject the lease, then the asset can be immediately recovered by the lessor without regard to the remaining term of the lease, which allows the lessor to re-lease to another party. This may entail some downtime in which the asset remains idle, but the deadweight loss is usually less than that experienced by holders of security interests, who are subject to an automatic stay in seeking to force a sale of the asset to cover the debt.[33]

In addition, a lender who holds a security interest in property owned by an insolvent purchaser has a priority over unsecured creditors only to the extent that the property equals or exceeds the value of the debt. If any portion of the property is underwater, it is an unsecured claim.[34] Moreover, if the court concludes that the asset is important to a reorganization of the debtor, the lender may be forced to take cash or other property deemed to be of equivalent value to the security interest,[35] which subjects the lender to valuation risk (Dick, Hulse, & Bagley 2019, p. 188). Overall, secured lenders recover only about 92 cents on the dollar when the debtor declares bankruptcy (Hemel 2011, p. 1501). This explains the extensive caselaw in which secured lenders seek to recharacterize their interests as leases. Lessors enjoy better security relative to holders of secured debt.

4.1.4 Summary

In sum, lessees may prefer leases as a financing device because they cost less than purchasing an asset. This is primarily a function of the fact that one gets less with a lease: one gets only a fraction of the useful life of the asset. Lessors may prefer leases as a financing device because they provide greater security in the event of default.

31 11 U.S.C. § 365(a).

32 11 U.S.C. § 365(b)(1)(A).

33 11 U.S.C. § 362(a). The holder of the security interest is not entitled to monthly payments for the use of the asset while it is subject to the automatic stay. United Savings Assoc. of Texas v. Timbers of Inwood Forest Assocs., Ltd., 484 U.S. 365 (1988).

34 Under the Bankruptcy Code, 11 U.S.C. § 506(a)(1), secured creditors have a priority over general creditors only as to the value of the security. So, if a creditor has loaned the debtor $10,000,000 but the collateral is only worth $5,000,000, the creditor is secured as to $5,000,000 and not secured as to the other $5,000,000 (Hemel 2011, p. 1500).

35 11 USCA § 362(d)(2)(B).

There is clearly an interaction between the advantages to lessees—lower monthly charges—and the advantage to lessors—greater security in the event of default. If the security of the lessor were to deteriorate, perhaps to the level associated with security interests, then it is reasonable to assume that lessors would respond by requiring higher monthly rental charges, or at the very least would become pickier about those to whom they agree to lease. Conversely, if lessors continue to have a more security relative to secured lenders, it is reasonable to assume that, at least in a competitive market, these cost savings will be passed on, at least in part, to lessees in the form of lower rents, or at least less strenuous screening by lessors.

The irrelevance theorem is valuable in highlighting the function of leases as a financing device. It also highlights the role of accounting standards and tax law in influencing the lease or purchase decision, at least by business firms with ready access to capital markets. However, by relaxing the theorem's assumptions—especially the assumptions that all parties have access to capital markets, there are no differential transaction costs of acquiring and disposing of assets, and there is no risk of default—we obtain a much better picture of the economic role of leasing as a financing device. Leasing will be the preferred means of financing the acquisition of assets by persons who are constrained in their access to capital markets, and/or who present a material risk of default.

4.2 Leases as a Risk Management Device

A second function of leases is to manage risk. Leasing can be used to reduce certain risks associated with owning assets, but it also creates risks relative to ownership. This Section will first consider how leasing can be used as a tool by both lessors and lessees to reduce the risk associated with ownership of assets. It will then discuss some of the devices that can be used to mitigate the risks created by leasing itself.

4.2.1 How Leases Can Reduce the Risks of Ownership

Leases are used by both lessors and lessees to reduce the risks associated with ownership of assets. For lessors, an important feature of leases is that they transfer the residual rights (sometimes called residual claims) associated with an asset from the lessor to the lessee for the duration of the lease (Barzel 1997, p. 38–39). This was perceived by courts as early as the foundational case of *Paradine v. Jane*.[36] The lessee captures the upside gains associated with the asset—high crop prices, increased demand for the output of a machine, the rising value of occupancy of an apartment due to a housing shortage.

36 82 Eng. Rep. 897 (K.B. 1647). The court observed: "[A]s the lessee is to have the advantage of casual profits, so he must run the hazard of casual losses[.]" *Id* at 898.

At the same time, the lessee suffers the downside risks—crop failure, technological obsolescence, the falling value of occupancy due a glut of new construction. The lessor, in contrast, converts its interest in the asset, at least for the duration of the lease, into a fixed return in the form of periodic payments of rent. A close analogy is to the bondholders and stockholders of a firm. The lessor, analogous to the bondholders, is promised a fixed return, subject to the risk of default. The lessee, like the stockholders, absorbs the residual profits and losses after satisfying the obligation to pay rent.[37]

The transfer of residual rights to the lessee is a universal feature of all leases, and follows from the transfer of possession and use of the asset to the lessee for the duration of the lease. As a rule, the party who has possession and use of an asset enjoys the accessionary rights associated with the asset. Accessionary rights are the rights to capture derivative assets or values closely associated with some more prominent asset (Merrill 2009, pp. 495–496). A paradigmatic example is the right of a person who has possession of land to plant and harvest crops that grow on the land. Control of the land, the prominent asset, automatically confers the right to control vegetation that grows on the land, the derivative asset. The allocation of residual rights to the lessee applies to every lease and rental contract, no matter how short its duration. Suppose you reserve the rental of a convertible from Hertz for one day. If the chosen day turns out to be sunny and mild, perfect for riding around in a convertible, you capture the added value of having use of a convertible for one day. If the day turns out to be rainy and miserable, you suffer the loss of having a convertible for a day when it is of no additional value.[38]

As should be obvious, the party who holds the residual rights bears more risk than the party who has converted its interest into a stream of fixed payments. Thus, a primary strategy for the owner of an asset who wants to eliminate or reduce the risks associated with ownership is to lease the asset. This is

37 The concept of residual rights or claims is often employed in discussing business organizations (Grossman and Hart 1986; Hart and Moore 1990). As Barzel points out, there may be multiple residual claimants in this context. The company that insures the business against fire, for example, is the residual claimant with respect to the risk of fire (Barzel 1997, pp. 60–62). Leasing is actually a much more straightforward application of the residual rights concept, insofar as the lessor's rights to rental payments are fixed by contract and these payments are the principal liability the lessee incurs before ascertaining the value left over from use of the asset, i.e., the residual.

38 As this example suggests, residual rights in this context refer not only to any financial return or profit enjoyed by the lessee after paying the rent, but any value associated with possession and use of the asset during the lease term. Obviously, residential leases and consumer auto leases yield benefits to the lessee that may not be readily monetizable. Also, it is important to note that the lessor has the residual rights after the lease terminates, in the form of changes in the value of the reversion. Thus, for example, if a tornado destroys a leased warehouse, this will clearly impair the value of the reversion. Insofar as the lease or relevant statutory law provides for termination of the lease in the event of such a catastrophic loss, the lessor would bear all, or nearly all, the residual loss.

why entities that need to generate a stable and secure flow of funds, such as insurance companies and pension funds, often invest in commercial real estate which is leased.[39]

For lessees, leases reduce the risk of holding an asset for the full length of its useful life. One source of risk associated with ownership can be called experiential. Consumers in search of housing may be uncertain about whether a particular type of house or apartment will fit their lifestyle. Those in search of an auto may not know which model is right. Similar concerns apply to businesses contemplating the acquisition of various assets that serve as inputs to their operations, whether it be kitchen equipment for a restaurant, computer equipment for a bank, or warehouse space to reduce distribution bottlenecks. The critical feature of leases that serves to minimize these sorts of experiential risk is the finite term of the lease, always less than the useful life of the asset. The ability to lease for a comparatively short period of time will provide information about the type of asset in question that may resolve these uncertainties.

With respect to real property, there are other, more particular reasons for wanting to minimize the experiential risk associated with ownership. Someone who has just moved to a community or is starting a business in a new community may not know whether they will want to stay for an extended period of time. Leasing offers a way to test the waters, and then decide, after acquiring more information about the community, whether to stay or move on.

In theory, these kinds of experiential risk can be reduced by purchasing the asset and then selling it if it proves unsatisfactory. But the transaction costs of purchasing and selling are nearly always higher than the transaction costs of leasing and not renewing. This is indubitably true with respect to real property, given the substantial costs associated with purchases of real estate, including contract negotiation, credit qualification, title searches, and physical inspection (Holtzschue 2007).[40] It is also usually true in the personal property context, given the economies of scale and expertise that leasing companies enjoy in re-leasing or selling previously-leased assets, relative to individuals (Gavazza 2011, p. 336).

A related set of risks concerns the quality of assets. A consumer eager to acquire a new car that lacks a track record for frequency of repairs may not want to risk buying a car that may turn out to be a money pit. One solution is to lease with an option to buy—a feature universally provided with consumer

39 It is also why wealthy elites in societies where agricultural land is the primary source of wealth often lease their land, so as to provide a stable source of income to support their idle lifestyles. This was true in ancient Rome (Kehoe 1997, pp. 137–144) as well as in pre-industrial England (as in the novels of Jane Austin, where various suitors are appraised in terms of their fixed income per annum).

40 Housing experts advise that because of transaction costs, including brokerage fees, renting is generally more advantageous than owning when the occupant anticipates staying less than five to seven years (Sullivan 2018).

auto leases (Miller 1995; Giaccotto, Goldberg, & Hegde 2007). If the auto proves to be largely free of repair costs and is otherwise satisfactory, the consumer can exercise the option and buy it at the end of the lease. If the experience is negative, the car can be turned in at the end of the lease.

A special type of quality risk is the risk of technological obsolescence. Autos are currently undergoing rapid innovations in safety equipment, associated with the use of advanced sensory devices and computers, allowing autos automatically to brake for unseen objects, control drifting out of lanes, warn of potential impediments in backing up, and so forth. Fully autonomous driving is widely predicted to be only years away. In this context, it may make sense to lease a car rather than invest in ownership of a vehicle that may soon be outmoded. Businesses have for many years faced similar risks in acquiring computers, servers, and similar types of office equipment. Leases assure that the equipment can be upgraded when the lease term ends; purchasing may mean that the equipment must be held beyond the point when it no longer represents state-of-the-art technology. Of course, if the lessee avoids the risk of technological obsolescence, this risk must be borne by the lessor. But the lessor, assuming it specializes in leasing the equipment in question, may be in a better position to assess this risk. Also, the lessor may be able to diversify against this risk by leasing a variety of types of vehicles or equipment or by disposing of older equipment in emerging markets.

With respect to real property, whether residential or commercial, another source of risk is changed conditions. Real property is immovable, but the community around it continually evolves. The value of the property is likely to change over time based on factors largely outside the owner's control, such as changes in local demographics, zoning or other land use regulations, the condition of local infrastructure, local crime rates, and other ineffable factors that make an area either "hot" or "dead" (Benjamin, de la Torre, & Musumeci 1998, p. 229). For many households and small businesses, ownership of real property where they live or conduct their business will represent a very high degree of nondiversified risk (Fischel 2001, pp. 4–18). The risk of a decline in the value of this asset due to a decline in the quality of the neighborhood will not be offset by other assets exposed to different risks.[41] A more rational investment strategy, for either a household or a small business, is to lease real property, and invest the money saved in a more diverse portfolio of assets.

Given all these risk factors, we can see more generally how variability in the duration of leases can be used to enhance the welfare of lessees. We can frame

41 Of course, many households are in exactly this position—they have stretched to purchase a house or condominium unit which represents an outsized portion of their net worth (Grinstein-Weiss, Key, Carrillo 2015; Dickerson 2019, p. 238).

the point in terms of the literature celebrating the rise of the "access" or "sharing" economy (Kreiczer-Levy 2017). Sometimes this literature draws a contrast between acquiring the use of an asset on a very short-term basis, such as renting an auto from Zip-car or acquiring a tool from a tool-sharing library, and owning an auto or a tool. Sometimes the contrast is drawn between obtaining services, such as transportation provided by Uber or storing digital records on the cloud, and purchasing assets that provide such services (Botsman & Rogers 2010; Tzuo 2018). Either way, the literature constructs a sharp dichotomy between very short term, primarily contractual relationships, and full ownership, characterized by the obligation to hold an asset for its entire useful life.

When we add leasing to the mix, we see that the dichotomy is overdrawn, and that in reality people have a continuum or spectrum of options, of which the access economy and ownership are the polar extremes. Leasing spans the gap between the short-term rental or services contract and ownership of assets for a potentially infinite time. This is of particular advantage to lessees, as it allows them to strike a preferred balance between flexibility and stability, experimentation and security.

Reducing risk is a benefit, for which anyone who is able to secure a reduction in risk generally will have to pay. That is why people have to pay premiums to acquire insurance. Thus, if a lessor is able to reduce the risk of owning an asset by transferring the residual rights to the lessee, the lessor should be expected to pay for this. Similarly, if the lessee is able to reduce experiential risk by leasing an asset for a limited term, the lessee should be expected to pay for this. At the same time, of course, taking on additional risk is a cost. Given the bilateral nature of leases, a reduction in risk to one party generally means an increase in risk to the other.[42] Presumably, lease terms are adjusted so that the party that obtains the greater benefit from risk reduction secures that benefit. Happily, leases offer a nifty way of obtaining offsetting payments for the cost of this risk reduction, via adjustments in the rent. Thus, one would expect, *certeris paribus*, that a lessor who secures a reduction in residual risk by entering into a long-term lease will obtain a lower rent per time period than the lessor would obtain under a shorter term lease. Conversely, one would expect that a lessee who secures a reduction in experiential risk by entering into a short-term lease will have to pay a higher rent per time period than the lessee would pay under a long-term lease. This proposition should be empirically testable.

42 As observed in one recent account (Lahart 2019), consumers who rent housing, cars, music, and videos face reduced risk in an economic downturn, because they can exit these markets easily. But the firms that lease these assets face *increased* risks that they will be stuck with unwanted assets.

4.2.2 Mitigating Risks Created by Leasing

Although leases perform valuable functions in reducing the risks associated with ownership of assets, they also create risks. Lessors face the risk of lessees failing to pay rent or engaging in misconduct that damages the asset or alienates other lessees. Lessees face the risk of lessors interfering with their possession and use of the asset, perhaps by selling the reversion to a third party. Another source of risk is created by the very division of rights between the lessor and lessee. The lessee has present possession and use of the asset; the lessor has the right to receive rent and to reclaim possession after the lease has ended. This division of rights creates a risk of opportunism on both sides. Lessors will worry that lessees will excessively depreciate the asset, either by overusing it or failing to maintain it. Lessees will worry that the lessor will shirk on promises to provide services provided in conjunction with the lease, or will otherwise behave opportunistically to capture the value of improvements made by the lessee. These reciprocal risks were identified long ago by Pigou, who characterized them as a type of externality associated with leases of agricultural land (Goldberg 1981, pp. 44–47).

Before considering some specific ways in which leases can be adjusted to reduce the risks associated with leasing, it is appropriate to offer a more general observation about how the relational exchange feature of leases works to suppress opportunistic behavior on both sides. As long as the lease remains in effect, the relationship between the parties closely resembles the type of repeated game that has been shown to create a high probability of cooperative behavior between participants in game-theoretic experiments (Axelrod 1984; Ellickson 1991, pp. 275–278). For each period, the lessee expects to enjoy the possession and use of the asset along with any services promised by the lessor. The lessor expects the lessee to pay the rent, and to adhere to any obligations of behavior and maintenance designed to preserve the value of the reversion. If the lessor performs its obligations, the lessee will pay the rent; if the lessee pays the rent, the lessor will perform its obligations. Both parties face a risk of defection by the other. But as long as the value of the relational exchange remains positive on both sides, potential conflicts as they arise they will usually be managed. The party confronted with perceived misconduct will likely raise the issue with the other, and some kind of accommodation will be agreed upon. This explains why it is difficult to find litigated decisions involving disputes between lessors and lessees while the lease remains in effect (Ellickson 1991, pp. 276–277). Nearly all disputes arise in end periods, either at the beginning of the lease or, more commonly, at the end.

The reduction in opportunistic behavior achieved through the relational exchange feature of leases is subject to several qualifications. First, the lease must have more than a minimal duration in order to achieve the repeated-game constraint. A one-shot short-term rental will not achieve this effect. Second, regulatory interventions that severely constrain the ability or willingness of the parties to exit from the relationship—such as those that emerge from rent control regimes—may prevent mutual reciprocity from emerging or being sustained (Ellickson 1991, pp. 277–278). Third, the relational feature will largely work to resolve minor risks or irritations, or prevent them from escalating into major ones. If the lessee is late in paying rent in one or more periods, or the lessor fails to fire up the furnace before the cold weather sets in, the aggrieved party will likely complain to the other, and this will generally result in a resolution of the issue. But if the lessee goes bankrupt, or the lessor dies and is replaced by indifferent heirs, relational exchange is likely to break down. These sorts of major risks must be managed using other mechanisms.

In considering more particularly how leases can be structured to minimize risk, we begin with the lessor. Here, the most prominent source of risk is lessee misconduct, including most commonly nonpayment of rent. Economists have given special attention to a moral hazard created by the finite duration of leases, namely that the lessee has an incentive to overuse the asset or shirk on maintenance insofar as the cost of this behavior will be borne by the lessor in the form of reduced value of the reversion (Henderson & Ioannides 1983).

One familiar device for dealing with the risk of lessee misconduct is the security deposit. This is not an advance payment of rent but a sum of money that can be used if the lessee defaults on payment of rent or otherwise abuses the asset (Schoshinski 1980, p. 465). If the lessee complies with all obligations under the lease, the security deposit must be returned at the end of the lease; otherwise it is forfeited to the lessor as (partial) compensation for its losses. The prospect of losing the deposit undoubtedly serves to deter lessee misconduct.

Another feature of leasing that helps reduce the risk of lessee misconduct is the ability to vary the lease term. If the lessee is perceived to be high risk, either for default or for other bad behavior, the lessor can start with a short-term lease, such as a month-to-month tenancy. This both limits the lessor's exposure to risk and allows for nonrenewal if the risk materializes. If the risk does not materialize, i.e., the lessee turns out to be reliable and responsible, the lease can be rolled over or extended for a longer term (Cheung 1969, p. 83). The adjustments in response to lessee misconduct are not limited to renew or not renew. At least in the context of real property leases, it is common practice for landlords to freeze or moderate rent increases for reliable tenants, in the hope of inducing them to renew (Goodman and Kawai 1985; Velsey 2018). Tenants who have to be hounded for payment or who engage in behavior irritating to other tenants can be subjected to larger rent increases as a condition for renewal. In general, one can see the short-term renewable lease as a kind of

Bayesian device that allows the lessor to adjust lease terms as information accumulates about the behavior of the lessee. As such, it serves as an effective device for limiting the risk from lessee misconduct.

Another way to minimize the risk of lessee misconduct is through diversification. Here scale economies are critical. A landlord who owns a four-unit apartment building faces greater risk from a defaulting tenant than does a lessor who owns an eight-unit building, who in turns faces more risk than the owner of a sixteen-unit building, and so on. The larger the number of units, the less financial harm will be incurred if one or a small number of tenants default or engage in other forms of misconduct. This is especially true if the units are in different locations or cater to different segments of the rental market. The same point applies to equipment leasing. The logic of reducing risk through diversification suggests that large-scale leasing companies will enjoy an inherent advantage over mom and pop operations. There is some empirical evidence backing this up (Benjamin, de la Torre, & Musumeci 1998, p. 228).

Not only does leasing help to minimize risk of misconduct as experienced by the lessor, it also helps reduce this risk to other lessees. In the context of multi-unit real property, the lessor largely internalizes the costs of lessee misconduct, given the lessor's desire to maintain the good will of other lessees and to preserve the value of the reversion (Hemel 2011). If the lessee abuses the asset or engages in misconduct that results in irritation to other lessees, the lessor will bear some of the costs, in terms of higher vacancy rates and resistance to rent increases from other lessees. In contrast, the seller of a multi-unit property, such as a real estate developer, typically externalizes the risk of misconduct to others, such as other unit owners, who may be forced to pay increased assessments to cover a unit owner's default or damage. Thus, leasing creates superior incentives to control these risks.[43]

If the primary risk is the moral hazard of the lessee's overuse of the asset or poor maintenance, the optimal strategy for the lessor may be to insist on a relatively long-term lease. The rationale here would be that if the lessee will hold the assert for a significant period of time, the lessee will be the one who suffers, at least to a significant degree, from overuse and improper maintenance of the asset. Obviously, one cannot simultaneously minimize the risk of default by using short-term leases and minimize the risk of abuse or poor maintenance by using long-term leases. What one would expect, and what we generally find, is that lessors adjust the duration of leases in response to what they perceive to be

43 A similar if less pronounced internalization probably occurs with personal property leasing, insofar as abuse of the asset by individual lessees may diminish the quality of the lessor's reputation with other potential lessees. This reinforces the lessor's incentive to insist on regular maintenance and to monitor the behavior of lessees.

the primary risk in the relevant market. With respect to leases to low-income residential tenants, the primary risk is default, and very short, month-to-month tenancies predominate. With respect to leases in commercial office buildings where the tenants are law firms, accounting firms, advertising agencies, and so forth, the risk of default is less salient, and the concern about moral hazard comes to the fore. Here long-term leases in the range of ten years or so predominate.

Another device for controlling moral hazard is to grant the lessee an option to purchase at the end of the lease. Even if the lessee is unlikely to exercise the option, the value of the option will be directly affected by the lessee's upkeep of the asset during the duration of the lease. Thus, if the lessee harbors even a remote thought that it might exercise the option, it will have an incentive to avoid excessive depreciation of the asset. Without regard to whether the lessee exercises an option to purchase, leases of motor vehicles and trailers commonly include a "terminal rental adjustment clause" or TRAC which permits the lessor to impose an adjustment payment at the end of the lease if the value of the vehicle falls below some predetermined amount.[44] This too is obviously designed to deter or at least compensate the lessor for over-depreciation of the asset.

A primary source of risk to lessees is lessor misconduct. This can take the form of insufficient investment in common facilities, failure to provide inputs like utilities if promised in the lease, poor maintenance (if the lessor has maintenance obligations), or failure to control misbehavior by other lessees. One way to minimize these risks, at least in the commercial leasing context, is the percentage lease. Under such a lease, the lessee typically pays rent in a fixed base amount and in addition pays a percentage of revenues or profits. A percentage lease effectively transfers a portion of the residual rights ordinarily assigned to the lessee to the lessor (Barzel 1997, p. 49). This reduces the risk to the lessee of bearing the residual rights. A percentage lease also creates an incentive for the lessor to fulfill obligations important to the success of the lessee's endeavor. The more successful the lessee, the higher the rental income of the lessor pursuant to the percentage formula (Murray).[45] A somewhat analogous device found in the agriculture context is the sharecropping lease. This provides that the sole rental obligation of the tenant is to share the output of

44 Federal tax law specifically provides that TRAC penalties do not disqualify a transaction from being regarded as a true lease. See 26 U.S.C. § 7701(h).

45 The use of percentage leases cannot be explained in terms of creating incentives for the lessee, since the percentage lease *reduces* the incentive of the lessee to maximize output relative to the effect of a fixed rental obligation. Percentage leases benefit lessees by reducing the risk associated with residual rights and by providing powerful incentives for lessors to cooperate in providing services and other inputs. Cheung makes an analogous point about sharecropping leases (pp. 62–72).

the farm with the landlord in some percentage, such as 50–50.[46] This minimizes the risk to the tenant of a bad harvest, which is often a function of weather and other factors outside the tenant's control. If the landlord has obligations under the lease such as providing irrigation services or seed and fertilizer, sharecropping also minimizes the risk of landlord misconduct (Ellickson & Thorland 1995, p. 371).

4.2.3 Summary

Leasing can be used to reduce the risks associated with ownership. It does so by dividing the residual rights associated with the asset. Residual rights are transferred to the lessee for the term of the lease, but because the term is less than the useful life of the asset, some of the residual rights remain with the lessor. Each party bears less risk than if they held the asset alone. Reducing risk is a benefit, for which the party who achieves the greatest reduction in risk will have to compensate the other. Leases provide a ready mechanism to do this through adjustments in rent. Like other divisions of rights, whether it be through future interests, trusts, or corporate ownership, the division of rights creates new risks of opportunism. Leasing practice has developed a number of devices to control the risks created by division. These devices do not work perfectly, but collectively they probably ensure that leasing serves to reduce the most relevant risk as perceived by the parties more than it generates additional risk.

4.3 Leases as a Device for Reducing Transaction Costs

A third function of leases is to reduce transaction costs that would otherwise preclude owners of assets from entering into value-maximizing contracts with other owners of assets. In effect, the lessor serves as the collective agent of lessees to provide localized public goods that the lessees would have great difficulty providing by contract if the assets were independently owned, because of high transaction costs.

4.3.1 Specialization of Functions

One way in which leases reduce transaction costs is by creating a specialization of functions between the lessor and the lessees. This is made possible by the

46 Cheung hypothesizes that sharecropping leases have higher transaction costs than fixed rental leases, because of the difficulty of monitoring the behavior of the lessee to prevent cheating. He presents evidence that such leases nevertheless tend to be used when variability in output is high (because of the weather) and government crop insurance is not available or is inadequate (Cheung 1969, pp. 70–71). Others (Allen and Lueck 1992) argue that the decision to use sharecropping rather than cash rent is driven by the difficulty of monitoring the tenant's depletion of the soil and the costs of division of the crop.

fact that leasing entails a division of rights. The lessee has possession and use of the asset for a limited duration; the lessor holds the reversion and the right to receive periodic rent as long as the lessee remains in possession. If the lessor held nothing but a reversion this might not be enough to support a specialization of functions. But the combination of the reversion and the lessor's right to receive periodic rent means that the lessor will invariably have an active, ongoing interest in how the lessee is behaving with respect to the asset. The lessor has both a future interest in the asset but also a kind of present interest (receiving rent). This division of rights allows leasing to be structured so that the lessor specializes in certain functions, the lessee specializes in other functions, and each party has a strong incentive to perform its assigned functions.

As in other contexts, specialization of functions is often value-enhancing (Barzel 1997, p. 51; Kelley 2014, p. 875). One party can concentrate on certain functions with respect to an asset as to which it has particular expertise or informational advantages; the other party can focus on other functions where it has advantages. The result is that the asset is more valuable than it would be if either party held it in full ownership. An alternative to leasing is to contract with agents to achieve a specialization of functions. But this gives rise to familiar principle-agent problems (Jensen & Meckling 1976; Sitkoff 2004), and there are reasons to believe that in many contexts a division of control through leasing provides better incentives for achieving value-maximizing specialization. This is because both the lessor and the lessee have a direct stake in making the venture a success.

As an illustration of the way leasing is used to achieve a specialization of functions consider shopping centers. Whether we are speaking of mega-malls or strip malls, shopping centers are almost universally organized by leasing.[47] One party, the lessor, owns the land and building. Space in the building is leased to different retail establishments. This arrangement allows the lessor to specialize in a number of functions common to the complex as a whole. These include maintaining the overall structure of the building and parking lot, providing heat, air conditioning and other utilities to the building, insuring the building against loss, providing a security service to protect the complex against theft and vandalism, selecting tenants to ensure compatibility with

47 The economics literature on shopping centers takes it for granted that they are organized by leasing rather than some other mode of organization and explains this in terms of "agglomeration effects" (offering multiple outlets for comparison shopping by customers) or "retail demand externalities" (such as anchor stores attracting customers who shop at other stores) (Eppli and Benjamin 1994 , pp. 11–18) Both of these features are what this article calls "complementarities." To the extent that specialization of functions is considered in the literature, the emphasis is on the lessor's function in providing centralized planning of the mix of outlets in shopping centers (West, Von Hohenbalken and Kroner 1985; Eaton and Lipsey 1982).

other tenants, determining standard hours of operation to prevent consumer confusion, and recruiting new tenants when existing tenants go out of business. Meanwhile, the interior spaces occupied by the lessees are subject to their individual discretion and control. They can decide (within limits) how much space to acquire, how to lay out the space, what kind of decorating they prefer, what kind and how much inventory to keep on hand, how many employees to hire, how to allocate assignments among the employees, and so forth.

There are many reasons to believe that this specialization of functions is value enhancing for both the lessor and the lessees, and presumably for consumers as well. By concentrating control over common areas and collective governance in the lessor, leasing allows one party to develop expertise in these matters. If the lessor deals repeatedly with issues involving the parking lot or the heating plant, the lessor will gain superior knowledge about these matters relative to what any individual lessee would have. The individual unit owners could attempt collectively to perform the common functions, perhaps under a condominium structure or by contract with a managing agent. But any such effort would encounter collective action problems. Some unit owners might free ride on the efforts of others, others might holdout and refuse to contribute their share of common costs, still others might engage in opportunism in an attempt to resolve collective issues in their favor. By giving these common functions to the lessor, the lessor can resolve such issues as they arise, either by acting unilaterally as the exclusive owner of the common areas, or by including appropriate covenants in the individual space leases (Hansmann 1991, p. 30; Benjamin, de la Torre, & Musumeci 1998, p. 229).

As a rule, the lessor will not act like an oppressive autocrat in resolving these issues. The lessor's incentive is to manage the property in such a way as to maximize the net rental value of the shopping center. Ultimately, the net rental value will be maximized if the shopping center is maintained so as to keep a healthy flow of paying customers patronizing the retail shops, which means that the incentives of the lessor roughly align with the interest of the lessees—and with consumer welfare.

On the other side of the coin, the value of the shopping center is probably also enhanced by decentralizing control of the interior retail spaces to the individual lessees of those spaces. The issues here are the familiar ones of comparing the performance of small entrepreneurs or franchisees to vertically integrated corporations (LaFontaine & Shaw 2005; Blair & LaFontaine 2006). The lessees, as independent firms, will likely be more responsive to consumer needs and preferences, will likely do a more effective job of hiring and supervising appropriate employees, and will likely generate more diversity and experimentation in offering different products and services to consumers. The history of the department store, which originally licensed departments to independent contractors and later integrated operations under hierarchical control, suggests that there is a trade-off between the advantages of decentralized control and certain economies of scale (Howard 2015). The rise of internet shopping sites like Amazon.com suggests similar trade-offs. But the continued dominance of leasing as a form of organization of shopping centers indicates that specialization of functions between lessor and lessees continues to have inherent advantages in organizing retail enterprises.

It should be obvious that similar factors are at work in organizing commercial office space or apartment buildings and complexes. Apartment buildings are a particularly interesting case, given the rise of the condominium (and to a lesser extent cooperative apartments) as an alternative mode of organization. As Hansmann has emphasized (1991, pp. 34–36), condominiums and cooperatives encounter collective action problems (similar to those mentioned in connection with shopping centers) that leasing avoids. This makes it something of a puzzle as to why the condominium form continues to expand (although leasing is still the most common form of organizing apartment complexes). Hansmann argues that distortions introduced by tax law provide the best explanation. Another reason might be that some persons who prefer living in apartments want the security of longer duration tenancy, and landlords for reasons considered momentarily have been unwilling to offer residential tenants (unlike commercial tenants) long-term leases.[48] Yet another explanation is that condominiums and cooperatives—because they require significant down payments as a condition of entry into the building—act as a de facto exclusionary device barring low income or low net worth households from the building (Strahilevitz 2003).

As these examples from the world of real property suggest, one important type of specialization that leasing permits is what can be called private land use regulation (Deng 2002). A complex organized by leasing allows one party—the landlord—to regulate the appearance of the overall complex, the outward appearance of the individual possessory units, and to place controls on the uses to which the individual units may be put. This allows one entity to generate positive externalities (in terms of maintaining a pleasing appearance and various common facilities or spaces) and minimize negative externalities

48 Commercial tenants commonly lease bare space, which must be fitted out with costly interior modifications and decoration (Halper 2003, § 3.03). Incurring this investment serves as a kind of commitment device by commercial tenants, which gives lessors confidence the lessee will remain in place for the full lease term. Residential tenants typically do relatively little interior modification and decoration, which makes the costs of relocation lower, and eliminates the commitment device associated with commercial leases. Cheung (1969, p. 83) has observed a similar pattern in the agricultural leasing context: when the tenant is required to provide significant assets (such as structures or irrigation ditches) long leases are chosen; when the tenant supplies mostly labor, short leases predominate.

(incompatible land uses). Indeed, in nineteenth-century England, before covenants running with the land were enforceable in equity,[49] large-scale subdivision development was structured through long-term leases, which permitted the landlord to enforce uniform appearance and control uses. Even today, it is common to see advertisements in London for sales of flats under 125-year or 99-year leases. More recently, both in the USA and England, subdivision controls have largely been maintained through covenants and zoning regulations. But as the shopping center and commercial office space examples show, leasing continues to perform the function of providing private land use regulation in many contexts.

Although less obvious, leasing also functions as a device for overcoming collective action problems in the personal property context. For instance, with respect to auto leases, the lessor will impose a variety of behavioral restraints on the lessee. The lessee must limit the miles the vehicle is driven or pay a penalty, maintain insurance coverage against loss, and comply with a schedule of regular maintenance, typically at facilities designated by the lessor. All of this is designed to maintain the residual value of the vehicle. But it also functions to generate a supply of high-quality (off lease) used cars, which enhances the profitability of dealers specializing in the brand by allowing them to make sales in a different segment of the market (Hendel and Lizzeri 2002).[50]

One type of specialization of functions which deserves special mention is specialization in disposing of assets that have not exhausted their full useful life (Benjamin, de la Torre, & Musumeci 1998, pp. 227–228). Under a lease, the asset is returned to the lessor before the end of the useful life of the asset. This naturally assigns to the lessor the function of disposing of the asset, either by selling it or leasing it to someone else. A lessor who has some experience with the process—and large-scale leasing companies will have a great deal of experience—will have a comparative advantage, relative to the lessee, in identifying and negotiating with potential transferees. This particular specialization of functions helps explain why landlords prefer short-term leases for residential leases, since residential leases tend to turn over relatively frequently. This allows the landlord to use its superior knowledge and expertise in selecting new tenants, rather than delegating the transfer function to the lessee, through assignment or subletting. The lessee will typically have little experience with the process, and may select a substitute tenant who is a poor credit risk or who

49 Tulk v. Moxhay, 2 Phillips 774, 41 Eng. Rep. 1143 (Chancery 1848).

50 Hendel and Lizzeri (2002) argue that auto companies set the price of the purchase option at a high level in order to encourage most lessees to return the car at the end of the lease, which generates a large pool of high-quality used cars for dealers to sell.

may otherwise pose a risk to the value to the reversion or to the welfare of other tenants.

Specialization in disposing of assets also helps explain the rapidly growing popularity of leasing autos. Some people prefer to hold autos until they are ready for the junkyard. But a large portion of the driving public wants to drive relatively new cars. If the only form of holding the asset were ownership, the owner would have to trade in the car when purchasing a new one, often at a significant discount to its market value, or would have to incur the transaction costs of selling the car him or herself. Leasing eliminates these costs, because the car is simply returned to the leasing company at the end of the lease, and the leasing company is responsible for disposing of it. Since the leasing company has a comparative advantage is disposing of used cars, this probably results in a better price on resale. In any event, it almost certainly saves on transaction costs.

One can go further, and see that the specialization of functions that leasing makes possible can eliminate or at least reduce problems of asymmetric information than inhere in any sale of assets. This the “lemons” problem made famous by George Akerlof (Ackerlof 1970).[51] The problem is created by the fact that the seller nearly always has more information about the quality of the asset than the buyer, and the buyer may assume that the seller is trying to dump an asset of below-average quality. The result is that buyers systematically discount the price they are willing to pay for an asset relative to what they would pay if they could accurately ascertain its quality.

The market for used autos, where the term “lemon” originated, shows how leasing can be used to reduce the problem of asymmetric information. When an auto is leased, the lessor can impose restrictions on the lessee, such as the number of miles the vehicle can be driven, requirements of periodic maintenance, and so forth. On termination of the lease, the car can undergo a thorough inspection by a dealer, who then offers the car for sale with a “certification” of its quality, including an extended warranty. This process has yielded a large market for two- to-four-year-old “certified” used cars, nearly all previously leased, in which consumers can assume with some confidence they are not getting a lemon. Such cars sell for a premium relative to cars of similar make and model sold by individuals or independent used car lots, presumably at a price closer to the value based on the actual quality of the asset. Leasing can accomplish this because the lessor can impose behavioral restrictions on lessees and can use its high volume of after-lease vehicles to adopt a certification program.

51 The use of leasing to solve lemons problems is noted by Benjamin, de la Torre, & Musumeci (1998, pp. 232–233).

This is another example of the specialization of functions made possible by leasing.

To the extent the lemons problem also exists with respect to new cars, leasing can help overcome the problem by combining the lease with an option to purchase. If the lessee ascertains during the lease term that the asset is of high quality, or otherwise is well suited to the lessee's needs, the lessee can exercise the option and acquire the asset for its full useful life. If the lessee is dissatisfied with the asset, the lessee can simply turn the asset back to the lessor at the end of the lease term. Virtually, all auto leases include an option to purchase the vehicle at its residual value at the end of the lease, which reflects another way in which leasing has been deployed in this market to help overcome the lemons problem.

In the market for real estate leases, the primary device for overcoming the lemons problem is through the reputation of the lessor. Lessors who develop favorable reputations presumably can lease and re-lease properties at higher rents than lessors with poor or unknown reputations. Lessors who have no reputation, such as individuals seeking to lease free-standing houses or condominiums, presumably fare less well, because of the lemons problem. All of which suggests that we should expect large-scale real estate leasing companies to flourish relative to small-fry leasing companies or individuals operating in the commercial real estate market. There is some data that backs this up (Benjamin, de la Torre, & Musumeci 1998, p. 228).

4.3.2 Complementarities Among Lessees

Leases can also be used to overcome collective action problems in order to achieve complementarities among lessees. These are situations in which the presence of one lessee enhances the prospects of another lessee, in ways that would be very difficult to arrange by contracts among independent owners of assets.

A good example is provided by a classic California case, *Medico-Dental Building Co. v. Horton and Converse*.[52] The lessor owned a building in Los Angeles in which it leased space on multiple floors to doctors and dentists. On the ground floor, it entered into a lease with Horton and Converse, a drug store. The lessor agreed to a covenant promising the drug store it would have the exclusive right to sell prescription drugs in the building. The various doctors and dentists who leased space on the upper floors executed covenants in which they agreed not to dispense prescription drugs. The exclusive dealing arrangement was clearly to the benefit of the drug store. In effect, it generated a

52 132 P. 2d 457 (Cal. 1942).

captive market in the form of patients who had scripts written by doctors and dentists in the building, which the patients would fill at the drug store on their way out. But it was also to the benefit of the doctors and dentists, insofar as having a functioning drug store on the ground floor added to the convenience of using medical professionals in the building. Thus, the leasing arrangement was designed to provide complementary benefits to both classes of lessees. The case involved a conflict that arose when one of the doctors started a clinic that included prescription drugs as part of its services. The lessor attempted to resolve the dispute, but failed. This illustrates another role that lessors can provide in managing a complex of assets: the landlord is the logical mediator when disputes arise among different lessees (Barzel 1997, p. 59; West, Von Hohenbalken and Kroner 1985).

The modern shopping mall of course provides many examples of complementarity on a large scale. Anchor department stores draw many customers, specialty shops may entice a smaller number but different customers. Either class of customer may end up spending money in stores at which they did not originally intend to shop. Many shopping malls now have one or more restaurants or food courts. Again, the restaurants may benefit from patronage by those who come to shop. But it is also undoubtedly the case that some who come for the restaurants stay to shop. The owners of shopping malls engage in extensive planning about the proper mix of stores and outlets in order to maximize sales (and thus rents).[53] This form of carefully-crafted complementarity is made possible by leasing. Such complementarity would be nearly impossible to achieve by contract in a traditional downtown shopping area, with multiple buildings owned by different owners.

An empirical paper by Peter Pashigian and Eric Gould puts a price tag on the value of complementarity in shopping malls (Pashigan & Gould 1998). They find that anchor stores in shopping centers pay on average 72 percent less in rent per square foot than do non-anchor stores (*id* at 125). Their explanation is that anchor stores drive customer traffic to shopping centers to a much greater extent than do non-anchor stores. They describe this as a positive externality for the non-anchor stores, which benefit from higher customer traffic than they would generate on their own.[54] A significant portion of the revenue earned by non-anchor stores is derived from the customer traffic generated by

53 As Eppli and Benjamin observe (Eppli and Benjamin 1994, p. 15): "[S]hopping center developers select, through active central management, an appropriate set of anchor and non-anchor tenants for a given market profile . . .. [They] optimize both the tenant mix of a center as well as the location of the tenants within a center."

54 I am not sure it is correct to call this is an "externality," since the differential contribution to customer traffic is captured in the differential lease rates. I think it more accurate to describe it as a complementarity.

the anchor stores, which justifies the practice of charging the anchors proportionately lower, and the non-anchors proportionally higher, rents. This reveals a strong form of complementarity between different classes of lessees. Transaction costs would surely prohibit any kind of contractual arrangement among multiple stores under independent ownership to secure side payments for differential contributions to customer traffic.

A final example of using leases to achieve complementarity comes from the fast food industry. Fast food outlets are commonly franchises, and the success of the franchisees may depend on the location of the outlets, which must be carefully selected with a view to prospective customer traffic. It is also important that franchisees be spaced far enough apart that they do not cannibalize each other's potential sales (Emerson 2010, p. 268). It is difficult to realize these objectives by imposing restrictive covenants in franchise agreements. One way to assure desired locational decisions is for the franchising company to lease or sublease outlets to franchisees. Franchisees are likely to go along with such an arrangement, especially if the franchising company, because of its superior financial resources, can negotiate more favorable lease terms than the franchisee could obtain on its own.[55] Controlling locations through leasing is less vulnerable to challenge and may allow for changes over time (e.g., recalibrating optimal locations and spacing of franchisees) at lower cost.

4.3.3 Redeployment of Assets

Another transaction-cost problem that leasing can help solve involves redeployment of assets from one firm to another within an industry. The oldest and most visible form of this, mentioned in Part 2, is the long-standing practice in the railroad industry of allowing rail cars to be moved over the lines of different railroads, subject to per diem charges that net out what is owed from different railroads to different car owners. This allows grain hopper cars to surge to the upper Midwest as corn, wheat, and soybeans are harvested and are ready for transport. And it allows tank cars to be redeployed between North Dakota and Texas as different oil and gas fields shift their rate of output. The end result is that swings in demand for rail cars can be handled with fewer total numbers of cars, an obvious efficiency.

Redeployment of assets may also explain the leasing policies of the United Shoe Machinery Company, which in the 1930s and 40s had a near-monopoly on machines used to manufacture shoes. The company refused to sell its most complicated machines, and required that they be leased for ten-year terms. The

55 See, e.g., Jannotta v. Subway Sandwich Shops, Inc., 123 F.3d 503 (7th Cir. 1997) (describing the leasing practices of Doctors Associates, Inc., the parent company of the Subway Sandwich chain of franchises).

leases also provided that United Shoe would service the machines at no additional charge. The shoe manufacturing industry at that time was highly fragmented with hundreds of individual producers. The manufacturers specialized in different styles of shoes, and were subject to the vagaries of fashion from year-to-year. But the machines used to manufacture the shoes were largely interchangeable. The mandatory leasing policy was challenged on anti-trust grounds, the theory being that this was United Shoe's method of maintaining its monopoly by preventing other firms from purchasing machines and entering into competition with United Shoe.[56]

My colleague Vic Goldberg has suggested that a better explanation for United Shoe's leasing policy relates to the high rate of failure in the shoe industry (Goldberg n.d.). United Shoe's leases provided that the leases would be cancelled if the lessee became insolvent or filed for bankruptcy.[57] There was evidence that nearly 25 percent of the machines were returned within the first five years, and that 40–50 percent had been under lease for less than ten years (Goldberg n.d.). This suggests that United's policy of leasing and servicing machines was adopted to allow rapid redeployment of well-maintained machines form one manufacturing firm to another. If shoe manufacturing firm A bet on the wrong style, and went out of business, United could repossess the shoe machines and re-lease them to firm B, which had bet on the right style. The leasing policy resulted in a more efficient deployment of capital goods in a highly competitive and unstable industry than could have been achieved by contract.[58]

A similar rationale helps explain the emergence of major aircraft leasing firms in the airline industry. Leasing took off in the U.S. airline industry after the enactment of the Airline Deregulation Act of 1978 (Gavazza 2011, p. 333). The Act stimulated the entry of new discount carriers and led to the consolidation and eventual bankruptcy of many legacy carriers. Evidence suggests that leasing became widespread in this volatile environment because it allowed carriers to increase or reduce the size of their fleets more rapidly and at lower cost than would be possible if all aircraft were owned (Gavazza 2011, p. 356). A study by Gavazza shows that leased aircraft are held by carriers for shorter durations than owned aircraft, fly more hours than owned aircraft, and have higher capacity utilization than owned aircraft. These findings suggest that

56 United States v. United Shoe Machinery Corp., 110 F. Supp. 295 (D. Mass. 1953).

57 110 F. Supp. at 317.

58 This does not mean that leasing will never implicate antitrust concerns. As a device for reducing transaction costs by creating a common agent (the lessor), it is plausible to imagine an industry dominated by a small number of lessors (in the limit one) in which the lessors are used as agents to fix prices or reduce output.

commercial airlines use leasing to make marginal adjustments in fleet size as the volume of traffic swings up and down. Adjustments could also be made by negotiating individual purchases or sales of used aircraft with other carriers. But Gavazza also presents evidence indicating that large leasing companies perform this function more efficiently, both by holding an inventory of planes and because of their deep knowledge of the needs of all carriers operating in the market (Gavazza 2011).

4.5 Reasons Not to Lease

The foregoing discussion of the multiple economic reasons why persons may prefer to lease assets should not be taken to mean that leases are always or inevitably the best way to hold assets. This Article has focused on the potential benefits primarily because the existing literature lacks any systematic discussion of this side of the equation. Yet it is no accident that leases are the second-most widespread form of holding assets—after full ownership. Certainly when we consider assets that are highly personal (like clothing and grooming instruments) or are quickly consumed (like foodstuffs) leasing effectively disappears. Even with regard to assets that are commonly leased, such as land and buildings, business equipment, and vehicles, ownership is a somewhat more prevalent form of holding assets. It is worth briefly summarizing some of the comparative advantages of ownership to suggest why—notwithstanding the many economic reasons to lease—many will ultimately prefer to own.

First, like any division of rights to assets—whether it be present and future interests, concurrent interests, trusts, or rights to partnership or corporate assets—leasing creates conflicts of interest and problems of opportunism that do not exist when one person is the sole owner of something. The discussion of the risks created by leases in Part 4.2.2 highlights some of these drawbacks in the context of leasing. Any decision to lease will inevitably entail an assessment of the trade-offs between the potential benefits of leasing and the inevitable conflicts and potential for opportunistic behavior created by the division of rights.

Second, again because of the division of rights, leasing will in many cases provide inferior incentives to make potentially valuable long-term improvements. This point has been mentioned in some of the literature on agricultural leases. For example, if the land could be made more valuable by constructing an irrigation ditch, the lessee may be reluctant to construct a ditch insofar and this will primarily enhance the value of the lessor's reversion; the lessor, for its part, may be reluctant to construct a ditch insofar as the value of the investment will depend on the maintenance effort of the lessee. A farmer who owns the land outright will fully internalize the costs and benefits of investing in a ditch, and may be more likely to make the improvement. Analogous points can be made about buildings and to some extent about equipment leases.

Third, leasing inevitably creates end-point problems, especially at the termination of the lease. At the inception of the lease, both the lessee and the lessor typically have market alternatives, which limits the bargaining power of each. At the end of the lease, if both parties wish to renew, they are locked in a bilateral monopoly, which may generate the costs associated with strategic bargaining (Cooter 1982, pp. 20–24). For example, if the lessee wants to renew, the lessor may try to extract a supra-normal rent increase because of the lessee's presumed desire to avoid the costs of relocation or the costs of removing improvements (Merrill 1986, p. 110–111). Conversely, as termination approaches, an unscrupulous lessee may stop paying rent, calculating that the time it takes to secure an eviction will deter the lessor from seeking legal recourse for this action. The simple way to avoid being exposed to these end-point problems is to own rather than lease.

Fourth, ownership invariably conveys greater discretion on the holder of an asset than does leasing; in other words, ownership does more to promote autonomy. The lessee will be constrained by lease provisions, or at the very least by the doctrine of waste, which requires the lessee to return the asset at the end of the lease term in the same condition as when the lease commenced, ordinary wear and tear excepted (Merrill 2011, p. 1090–1091). The lessor will also be constrained by lease terms, as well as by a desire to configure the asset in a generic fashion designed to appeal to the largest segment of the market. On both sides of the relationship, idiosyncrasy is discouraged. This provides another explanation, aside from tax considerations and a desire for long-term stability, for the rise of the condominium as an alternative to the rental apartments and townhomes. The owner of a condominium unit as has much greater discretion over design of the interior space than does a tenant. Marble countertops can be installed in the kitchen, a Jacuzzi in the bathroom, and so forth. There is reason to think that there is a growing preference for these kinds of customized interior features, at least at the upper ends of the market for apartments and townhomes.

Fifth, from the perspective of the lessee, ownership allows the accumulation of assets which contribute to net worth in the way that leasing does not. Home ownership rates in the USA (and elsewhere) are clearly motivated in significant part by a desire to build net worth. In many cases this will be illusory, if the dwelling unit is heavily mortgaged and used as a kind of piggy-bank when cash is taken out on refinancing or the property is encumbered with home equity loans or reverse mortgages. Nevertheless, it remains true that to the extent assets like houses have value in excess of financing obligations, this equity contributes to net worth and provides a form of personal security for the owner. A lease, from the perspective of the lessee, is simply an obligation, and makes no contribution to net worth. Similar considerations motivate business entities to own assets, especially if they are subject to capital requirements, as are banks, insurance companies, and pension funds. Of course, these entities typically obtain value from owning such assets by turning around and leasing them.

5. NORMATIVE IMPLICATIONS

Leasing is a flourishing institution. It is impossible to attribute this to the adoption of reform proposals advocated by academics. Real property leases in common law countries are subject to a law that started in the thirteenth century and which has been built up in sedimentary layers ever since, reflecting a largely untheorized mixture of property and contract precepts.[59] Personal property leases moldered for centuries in the pages of dusty treatises, which developed the convention of characterizing such leases as "bailments for hire." More recently, an explosion of personal property leasing has made it impossible to build a coherent legal structure on this threadbare base. The result was a new article of the UCC, patched together by a committee of commercial lawyers from a few intuitive ideas about leases, to which page after page of borrowings from the law of sales was appended (Boss 1988, p. 603). Given that leasing is flourishing in the face of what can only be described as academic indifference, one might fairly attribute its success to benign neglect. Perhaps the lesson is to leave well enough alone.

Nevertheless, I will offer a few normative suggestions based on the foregoing analysis of the multiple economic functions of leases. The first two are cautionary warnings about pursuing reforms that would undermine the utility of leasing. The second three are affirmative suggestions for more clarity in the law that applies to leasing.

- Leases perform an essential economic function of allowing persons to acquire assets at lower cost than what they would have to pay to own an asset. This is of vital importance to low income families seeking shelter, small businesses, and startup firms. Great care should be taken before adopting reforms that would have the effect of increasing the cost of acquiring assets by lease, unless such reforms can be shown to have an unambiguously beneficial effect on resource-constrained parties that exceeds any foreseeable increase in rents. An example would be a reform that

59 See Gardiner v. William S. Butler and Co., 245 U.S. 603, 605 (1918) (Holmes, J.) ("But the law as to leases is not a matter of logic in vacuo; it is a matter of history that has not forgotten Lord Coke.")

would increase the cost of recovering possession of a leased asset in the event of lessee default. Such a reform would predictably reduce the security of lessors, who would likely respond by increasing rents and/or the intensity of screening of potential lessees. The welfare effects in terms of more homelessness or reduced rates of new business formation could be substantial.

- The relational exchange feature of leases is critical in overcoming the risks that leases pose to both lessors and lessees. This is especially important when the lessor is obligated to provide services in connection with the asset, or the lessee is obligated to perform maintenance of the asset. Reforms that would upset the tit-for-tat that keeps both sides performing should be avoided if possible. A primary culprit here is rent control statutes that preclude lessors from raising rents and/or give tenants indefinite rights to lease extensions. Rent controls have long been criticized by economists as tending to discourage investment in rental housing and thus exacerbating housing shortages (Basu & Emerson 2000; Glaeser & Luttmer 2003; Jenkins 2009; Klingenberg & Brown 2008). Less commonly noted is that they create incentives for landlords to withhold services or otherwise engage in abusive behavior in order to force tenants to vacate and thereby secure a higher rental. The relationship can quickly degenerate from one of mutual cooperation to one that is adversarial and mired in acrimony and litigation (Ellickson 1991, pp. 277–278).[60] Problems of housing affordability should be addressed by programs to increase housing supply, not by imposing extensive regulation on the lessor–lessee relationship.
- On a more affirmative note, it would be desirable to assimilate both real property and personal property leases to the same general body of principles that serve to define a lease and establish important default provisions. Both types of leases perform similar economic functions, and there is no good reason to define real property leases by one set of principles unique to leases, and personal property leases by another set of principles derived from the law of bailments. UCC Article 2A takes a major step in this direction by describing personal property leases as leases. The FASB regulations go further, by explicitly assimilating both types of leases to the same set of

60 The response to the acrimony, all too often, is to impose additional regulatory requirements on lessors, such as "just cause" requirements for terminating leases or creating automatic rights of renewal for tenants (Rabin 1983, p. 534). Although these reforms address the immediate problem of abusive landlord behavior, they undermine the relational exchange feature of leases, which rests on a perception of mutual advantage. The primary academic argument in support of rent control is that it preserves community by avoiding displacement of tenants through gentrification (Radin 1983). But this overlooks the effects on community of underinvestment in leased properties and abusive landlords.

accounting rules. The trend should be supported and continued. UCC Article 2A should be revised to take better advantage of certain features of real property lease law, such as the doctrine of waste, the distinction between assignment and subletting, and the various circumstances that constitute a violation of the covenant of quiet enjoyment (e.g., constructive eviction).

- Of the implicit features that define a lease, some are relatively secure. I would include here the understanding that leases have a finite duration less than the useful life of the asset and the requirement that consideration be given for a lease, typically in the form of periodic payments of rent. These features are critical to a number of the economic functions of a lease, including their use as a financing device, their relational exchange quality, and the specialization of functions between lessor and lessee. It is not necessary to make these elements explicit conditions of the definition of a lease, because the mutual interest of the parties will nearly always result in their inclusion in a lease agreement. But it would be desirable to make them at least implied conditions, such that they will be imputed if the lease is otherwise silent on the subject.
- Another understanding—that the lessee has a property right in the lease—could use some shoring up. The weakness here is a product of the notion, propagated by law reformers in the 1970s, that leases should be interpreted like "ordinary" bilateral services contracts rather than conveyances of a property right (Merrill & Smith 2001, pp. 820–821). There was insight here, but it was overstated. Leases are predominately contractual, but at their core they also convey a property right—the right of the lessee to possess and use the asset for the term of the lease. Thus, leases confer standing on lessees to invoke the property torts of trespass, nuisance, trespass to chattels, and conversion against interference by third parties. Also vitally important is the covenant of quiet enjoyment, which protects the lessee from dispossession by the lessor while the lease remains in effect. This is critical in protecting the lessee's reliance interest, and should be made a defining element of every lease, including personal property leases. At the very least, the lessee's right to use the asset free of unexcused interference by the lessor, including sale of the reversion to a third party, should be a strong default, subject to override only by prominent disclaimer in the lease acknowledged by the lessee. One implication of the covenant is that lessees should be entitled to specific performance to enforce this property right.[61] Another is that banks and others creditors of the lessor should not

61 The New York Court of Appeals has rejected specific performance to enforce a lease after transfer of the reversion to a third party, on the ground that damages could be easily calculated. Van

be allowed to evict lessees as part of a foreclosure action against the lessor. Legislation authorizing such evictions should be subject to challenge as a taking of the lessee's property interest in the lease without just compensation.[62] A final implication is that all lessees should have an implied remedy for severe misconduct by the lessor that amounts to a constructive eviction. This is important for commercial and agricultural lessees, who are not protected by the implied warranty of habitability, and for personal property lessees, given the silence of the UCC on this point.[63]

6. CONCLUSION

Leasing has long been an important economic institution in the context of immovables—land and structures—and in recent decades has become equally important in the realm of movable or personal property. This article has sought to generalize the reasons why so many persons are attracted to leasing. The reasons have been gathered under three headings. (i) Leasing provides an alternative way to finance the acquisitions of assets that is appealing to those who have limited capital and income or who wish to conserve their capital and cash flow for other purposes. (ii) Leasing functions to minimize the risk of owning assets, by transferring the residual rights from the owner to the lessee for the duration of the lease and by allowing lessees to try out assets without committing to full ownership. (iii) Leasing, by dividing the rights to an asset between the lessor and the lessee, permits these parties to specialize in different functions and allows the parties to overcome various collective action problems that would be difficult to resolve by contract.

One reason why leasing has been such a successful institution is that the legally required elements are so minimal. This allows the parties great flexibility in structuring the other aspects of their relationship using specific lease provisions tailored to their individual needs and circumstances. This freedom to

Wagner Advertising Corp. v. S & M Enterprises, 492 N.E. 2d 756 (N.Y. 1986). The case involved a lease of space on the side of a building to erect a billboard, perhaps more accurately characterized as an easement in gross. *See* Baseball Published Co. v. Bruton, 18 N.E.2d 362 (Mass. 1938). The court failed to consider whether the covenant of quiet enjoyment should run with the land, absent an express disclaimer by the lessee, which limits the decision's precedential value. An English commentator has argued that personal property leases, as bailments for hire, should not run to transferees of the lessor (Swadling 1998).

62 The constitutional protection against uncompensated takings of property extends to the interest of lessees under an unexpired lease (Goldberg, Merrill, & Unumb 1987, p.1086–1087).

63 The UCC recognizes that leases of personal property enjoy an implied covenant of quiet enjoyment, U.C.C. § 2A- 211, which can be disclaimed only by language which "must be specific, be by a writing, and be conspricuous" *id* § 2A-214(4). But the code does not recognize that a breach of the covenant can give rise to an action for constructive eviction.

structure leases in individualized ways is central to achieving the economic functions that leases perform. Those who are interested in reforming the law of leasing should be aware of the multiple economic reasons why parties choose to structure their relationship by lease, and should take care that any reforms do not undermine the many advantages of leasing that account for its enduring and growing popularity.

REFERENCES

Ackerlof, George, 1970. The Market for Lemons: Quality Uncertainty and the Market Mechanism. 84 *Q. J. Econ.* 488–500.

Allen, Douglas & Dean Lueck. 1992. Contract Choice in Modern Agriculture: Cash Rent versus Cropshare. 35 *J. Law Econ.* 397–426.

Axelrod, Robert. 1984. *The Evolution of Cooperation*. New York, N.Y.: Basic Books, Inc.

Barzel, Yoram. 1997. *Economic Analysis of Property Rights*, 2nd edn. Cambridge: Cambridge University Press.

Basu, Kaushik & Patrick M. Emerson. 2000. *The Economics of Tenancy Rent Control*, 110 *Econ. J.* 939–962.

Benjamin, John D., Cris de la Torre & Jim Musumeci. 1998. Rationales for Real Estate Leasing versus Owning. 15 *J. Real Estate Res.* 223–238.

Blair, Roger D. & Francine LaFontaine. 2006. Understanding the Economics of Franchising and the Laws That Regulate It. 26 *Franchise Law J.* 55–66.

Boss, Amelia H. 1988. The History of Article 2A: A Lesson for Practitioner and Scholar Alike. 39 *Alabama Law Rev.* 575–614.

Botsman, Rachel & Roo Rogers. 2010. *What's Mine is Yours: The Rise of Collaborative Consumption*. New York, N.Y.: HarperCollins Publishers.

Bracton. c.a. 1220–1230. *On the Laws and Customs of England* (Samuel E., Thorne, trans. 1968). Cambridge, MA: Harvard University Press.

Bridge, Michael. 2015. *Personal Property Law*, 4th edn. Oxford: Oxford University Press.

Brown, Jason P., Timothy Fitzgerald & Jeremy G. Weber. 2016. Capturing Rents from Natural Resource Abundance: Private Royalties from U.S. Onshore Oil and Gas Production. 46 *Resource Energy Econ.* 23–38.

Carter, Laurence W. 1996. *Leasing in Emerging Markets*. Washington D.C.: The World Bank.

Chang, Yun-chien & Henry E. Smith. 2012. An Economic Analysis of Civil versus Common Law Property. 88 *Notre Dame Law Rev.* 1–55.

Cheung, Steven N.S. 1969. *The Theory of Share Tenancy*. Chicago, IL: University of Chicago Press.

Comment, Yale. 1955. Tenant, Lodger, and Guest: Questionable Categories for Modern Rental Occupants. 64 *Yale Law J.* 391–411.

Committee on Mortgage Law and Practice. 1968. Cost and Time Factors in Foreclosure of Mortgages. 3 *Real Property Probate Trust J.* 413–431.

Cooter, Robert. 1982. The Cost of Coase. 11 *J. Legal Stud.* 1–33.

Corsi, Thomas M., Ken Casavant & Tim A. Graciano. 2012. A Preliminary Investigation of Private Railcars in North America. 51 *J Transport. Res. Forum* 53–76.

Cull, Robert & Jonathan Murdoch. 2018. Microfinance and Economic Development. In Thorsten Beck & Ross Levine, eds., *Handbook of Finance and Development*. London: Edward Elgar Publishing.

de Glanville, Ronulf. 1189. *The Treatise on the Laws and Customs of the Realm of England* (G.D.G Hall trans. 1965). London: Thomas Nelson, Ltd. in Association with the Selden Society.

De Soto, Hernando. 2000. *The Mystery of Capital*. New York, N.Y.: Basic Books.

Deng, F. Frederic. 2002. Ground Lease-Based Land Use System versus Common Interest Development, 78 *Land Econ.* 190–206.

Dieter, Richard, John E. Stewart & L. Michael Underwood. 1980. *Accounting for Leases in Equipment Leasings—Leveraged Leasing*, 2nd edn (Bruce E. Fritch & Albert F. Reisman, eds.). New York, N.Y.: Practising Law Institute.

Dick, Diana Lourdes, Brian D. Hulse & Kevin D. Badgley. 2019. Reevaluating Risk and Return in Chapter 11 Secured Creditor Cramdowns: Interest Rates and Beyond. 93 *Am. Bankr. Law J.* 175–240.

Dickerson, A. Mechele. 2019. The Myth of Home Ownership and Why Home Ownership is Not Always a Good Thing. 84 *Indiana Law J.* 189–237.

Dobie, Armistead M. 1914. *Handbook on the Law of Bailments and Carriers*. St. Paul, MN: West Publishing Co.

Eaton, B.C. & R.G. Lipsey. 1982. An Economic Theory of Central Places. 92 *Econ. J.* 56–72.

Edmunds. 2016. *Leasing Report*. https://static.ed.edmunds-media.com/unversioned/img/industry-center/analysis/h1-2016-lease-report.pdf.

Eisfeldt, Andrea & Adriano Rampini. 2009. Leasing, Ability to Repossess, and Debt Capacity. 22 *Rev. Finan. Stud.* 1621–1657.

Ellickson, Robert C. 1991. *Order without Law: How Neighbors Settle Disputes*. Cambridge, MA: Harvard University Press.

——— 2012. Legal Sources of Residential Lock-Ins: Why French Households Move Half as Often as U.S. Households. 2012 *University Illinois Law Rev.* 373–404.

Ellickson, Robert C. & Charles DiA. Thorland. 1995. Ancient Land Law: Mesopotamia, Egypt, Israel. 71 *Chicago-Kent Law Rev.* 321–411.

Elliott, William F. 1929. *A Treatise on the Law of Bailments and Carriers*, 2nd edn (William Hemingway revisor). Indianapolis, IN: Bobbs-Merrill Co.

Emerson, Robert W. 2010. Franchise Encroachment. 47 *Am. Bus. Law J.* 191–290.

Eppli, Mark J. & John D. Benjamin. 1994. The Evolution of Shopping Center Research: A Review and Analysis. 9 *J. Real Estate Res.* 5-32.

Fairfax, Sally K., Jon A. Souder & Gretta Goldman. 1992. The School Trust Lands: A Fresh Look at Conventional Wisdom. 22 *Environ. Law* 797–910.

Fischel, William A. 2001. *The Homevoter Hypothesis: How Home Values Influence Local Government Taxation, School Finance, and Land-Use Policies*. Cambridge, MA: Harvard University Press.

Friedman, Milton R. 2016. *Friedman on Leases*, 5th edn (Andrew R. Berman & Marshall Tracht, eds.). New York, N.Y.: Practising Law Institute.

Frier, Bruce W. 1980. *Landlords and Tenants in Imperial Rome*. Princeton, N.J.: Princeton University Press.

Gavazza, Alessandro. 2010. Asset Liquidity and Financial Contracts: Evidence from Aircraft Leases. 95 *J. Finan. Econ.* 62–84.

——— 2011. Leasing and Secondary Markets: Theory and Evidence from Commercial Aircraft. 119 *J. Polit. Econ.* 325–377.

Glaeser, Erzo F. P. & Edward L. Luttmer. 2003. The Misallocation of Housing under Rent Control. 93 *Am. Econ. Rev.* 1027–1046.

Giaccotto, Carmelo, Gerson M. Goldberg & Shantaram P. Hegde. 2007. The Value of Embedded Real Options: Evidence from Consumer Automobile Lease Contracts. 62 *J. Finance* 411–445.

Gilmore, Grant & Charles L. Black, Jr. 1975. *The Law of Admiralty*, 2nd edn. St. Paul, MN: Foundation Press.

Goodman, Allen C. & Masahiro Kawai 1985. Length-of-Residence Discounts and Rental Housing Demand: Theory and Evidence. 61 *Land Econ.* 93–105.

Golderg, Victor P. 1981. Pigou on Complex Contracts and Welfare Economics. 3 *Res. Law Econ.* 39–51.

Goldberg, Victor P. n.d. The United Shoe Machinery Leases. (Unpublished paper on file with author).

Goldberg, Victor P., Thomas W. Merrill & Daniel Unumb. 1987. Bargaining in the Shadow of Eminent Domain: Valuing and Apportioning Condemnation Awards between Landlord and Tenant. 34 *UCLA Law Rev.* 1083–1137.

Grinstein-Weiss, Michal, Clinton Key & Shannon Carrillo. 2015. Homeownership, the Great Recession, and Wealth: Evidence from the Survey of Consumer Finances. 25 *Hous. Policy Debate* 419–445.

Grossman, Sanford J. & Oliver D. Hart. 1986. The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration. 94 *J. Polit. Econ.* 691–719.

Halper, Emanuel B. 2003. *Shopping Center and Store Leases*. New York, N.Y.: Law Journal Press.

Hansmann, Henry. 1991. Condominium and Cooperative Housing: Transactional Efficiency, Tax Subsidies, and Tenure Choice. 20 *J. Legal Stud.* 25–71.

Hart, Oliver D. & John Moore. 1990. Property Rights and the Nature of the Firm. 98 *J. Polit. Econ.* 1119–1158.

Hecht, Neil S. 1972. Variable Rental Provisions in Long Term Ground Leases. 72 *Colum. L. Rev.* 625–692.

Hemel, Daniel. 2011. Note, the Economic Logic of the Lease/Loan Distinction in Bankruptcy. 120 *Yale Law J.* 1492–1530.

Hendel, Igal & Alessandro Lizzeri. 2002. The Role of Leasing under Adverse Selection. 110 *J. Polit. Econ.* 113–143.

Henderson, J.V. & Y.N. Ioannides. 1983. A Model of Housing Tenure Choice. 73 *Am. Econ. Rev.* 98–113.

Holtzschue, Karl B. 2007. *Holtzschue on Real Estate Contracts and Closings*. New York, N.Y.: Practising Law Institute.

Howard, Vicki. 2015. *From Main Street to the Mall: The Rise and Fall of the American Department Store*. Philadelphia, PA: University of Pennsylvania Press.

Hutchison, Norman E., Alastair S. Adair & Kyungsun Park 2010. The Value of Rental Deposits. 28 *J. Property Invest. Finance* 250–262.

Isom, Terry A. & Sudhir A. Amembal 1982. *The Handbook of Leasing: Techniques and Analysis*. New York, N.Y.: Petrocelli Books.

Iqbal, Zamir & Abbas Mirakor. 2007. *An Introduction to Islamic Finance: Theory and Practice*, 2nd edn. Hoboken, N.J.: John Wiley and Sons.

Jacoby, Melissa B. 2010. The Value(s) of Foreclosure Law Reform. 37 *Pepperdine Law Rev.* 511–527.

Jenkins, Blair. 2009. Rent Control: Do Economists Agree? 6 *Econ. Watch J.* 73–112.

Jensen, Michael C. & William H. Meckling. 1976. The Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. 3 *J. Finan. Econ.* 305–360.

Johnson, Alex Jr. 1993. Critiquing the Foreclosure Process: An Economic Approach Based on the Paradigmatic Norms of Bankruptcy. 79 *Virginia Law Rev.* 959–1024.

Jones, Katie. 2019. *FHA-Insured Home Loans: An Overview*. Washington, D.C.: Congressional Research Service.

Kreiczer-Levy, Shelly. 2017. Share, Own, Access. 36 *Yale Law Policy Rev.* 155–217.

Klingenberg, Beate & Roger J. Brown. 2008. Rent Control Revisited: Effects on Property Management. 26 *Property Manag.* 56–65.

Kehoe, Dennis P. 1997. *Investment, Profit, and Tenancy: The Jurists and the Roman Agrarian Economy*. Ann Arbor, MI: University of Michigan Press.

Kelley, Daniel B. 2014. The Right to Include. 63 *Emory Law J.* 857–924.

Lafontaine, Francine & Kathryn Shaw. 2005. Targeting Managerial Control: Evidence from Franchising. 36 *Rand J. Econ.* 131–150.

Lahart, Justin. 2019. The Risks of Renting Everything. *The Wall Street Journal* B14.

Leaseurope. n.d. Available at: http://www.leaseurope.org/uploads/documents/LeaseuropeFF_15.pdf.

Lewis, Craig M. & James S. Schallheim. 1992. Are Debt and Leases Substitutes? 27 *J. Finan. Quant. Anal.* 497–511.

Lin, Jane-Raung, Chia-Jane Wang, De-Wei Chou & Fei-Chun Chueh. 2013. Financial Constraint and the Choice between Leasing and Debt. 27 *Int. Rev. Econ. Finance* 171–182.

Luppino, Anthony J. 2003. Stopping the Enron End-Runs and Other Trick Plays: The Book-Tax Accounting Conformity Defense. 2003 *Columbia Bus. Law Rev.* 35–190.

Mann, Ronald. 2017. *Cases and Materials on Commercial Finance*. St. Paul, MN: Foundation Press.

Mattingly, Basil H. 1996. The Shift from Power to Process: A Functional Approach to Foreclosure Law. 80 *Marquette Law Rev.* 77–133.

McClean, A.J. 1963. The Common Law Life Estate and the Civil Law Usufruct: A Comparative Study. 12 *Int. Comp. Law Quart.* 649–667.

McRobert, Ryan. 2012. Defining “Breach of the Peace” in Self-Help Repossessions. 87 *Washington Law Rev.* 569–594.

Merrill, Thomas W. 1986. The Economics of Public Use. 72 *Cornell Law Rev.* 61–116.

——— 2009. Accession and Original Ownership. 1 *J. Legal Anal.* 459–510.

——— 2011. *Melms v. Pabst Brewing Co.* and the Doctrine of Waste in American Property Law. 94 *Marquette Law Rev.* 1054–94.

Merrill, Thomas W. & Henry E. Smith. 2001. The Property/Contract Interface. 101 *Columbia Law Rev.* 773–852.

———. 2017. *Property: Principles and Policies*, 3rd edn. St. Paul MN: Foundation Press.

Miller, Stephen E. 1995. Economics of Automobile Leasing: The Call Option Value. 29 *J. Consumer Affairs* 199–218.

Miller, Merton H. & Charles W. Upton. 1976. Leasing, Buying, and the Cost of Capital Services. 31 *J. Finance* 761–786.

Modigliani, Franco & Merton H. Miller. 1958. The Cost of Capital, Corporation Finance and the Theory of Investment. 48 *Am. Econ. Rev.* 261–297.

Murray, John C. 2001. Percentage Rent Provisions in Shopping Centers: A Changing World. 35 *Real Property Probate Trust* 731–790.

Myers, Stewart C., David A. Dill & Alberto J. Bautista. 1976. Valuation of Financial Lease Contracts. 31 *J. Finance* 799.

Nelson, Grant & Dale Whitman. 2004. Reforming Foreclosure: The Uniform Nonjudicial Foreclosure Act. 53 *Duke Law J.* 1399–1514.

Newberry, David & Joseph Stiglitz. 1979. Sharecropping, Risk Sharing, and the Importance of Imperfect Information. In James A. Roumasset, ed., *Risk, Uncertainty and Agricultural Development.* Laguna, Philippines: Southeast Asian Regional Center for Graduate Study and Research in Agriculture.

Nunnally, Bennie H. Jr. & D. Anthony Plath. 1989. Leasing versus Borrowing: Evaluating Alternative Forms of Consumer Credit. 23 *J. Consumer Affairs* 383–392.

Pashigian, B. Peter & Eric D. Gould. 1998. Internalizing Externalities: The Pricing of Space in Shopping Malls. 41 *J. Law Econ.* 115–142.

Plunkett, Theodore F.T. 1956. *A Concise History of the Common Law*, 5th edn. Boston, MA: Little, Brown and Co.

Potheir, Robert Joseph. 1771. *Contract of Letting and Hiring (Contrat de Louage)* (G.A. Mulligan trans. 1953). Durban, South Africa: Butterworth and Co.

Prosser, William L. & Page Keeton. 1984. *Prosser and Keeton on the Law of Torts*. St. Paul MN: West Publishing Co.

Rabin, Edward H. 1983–84. Revolution in Residential Landlord-Tenant Law: Causes and Consequences. 69 *Cornell Law Rev.* 517–584.

Radin, Maraget Jane. 1986. Residential Rent Control. 25 *Philos. Public Affairs* 350–380.

Roy, Delwin A. 1991. Islamic Banking. 27 *Middle East. Stud.* 427–456.

Sax, Joseph L. 1983. Why We Will Not (Should Not) Sell the Public Lands: Changing Conceptions of Private Property. 1983 *Utah L. Rev.* 313–326.

Schall, Lawrence D. 1974. The Lease-Or-Buy and Asset Acquisition Decisions. 29 *J. Finance* 1203–14.

Schallheim, James C. 1994. *Buy or Lease?: Principles for Sound Decision Making.* Cambridge, MA: Harvard Business School Press.

Schoshinski, Robert S. 1980. *American Law of Landlord and Tenant.* Rochester, NY: Lawyers Co-operative Publishing Co.

Schroth, Peter W. 2010. Financial Leasing of Equipment in the Law of the United States. 58 *Am. J. Comp. Law Supplement* 323–351.

Simpson, A. W. B. 1986. *A History of the Land Law* 2d ed. Oxford: Oxford Univesity Press.

Sisson, Patrick. 2018. Self-storage: How Warehouses for Personal Junk Became a $38 Billion Industry. *Curbed*. https://www.curbed.com/2018/3/27/17168088/cheap-storage-warehouse-self-storage-real-estate.

Sitkoff, Robert H. 2004. An Agency Costs Theory of Trust Law. 89 *Cornell Law Rev*. 621–684.

Strahilevitz, Lior. 2003. Exclusionary Amenities in Residential Communities. 92 *Virginia Law Rev*. 437–499.

Story, Joseph. 1870. *Commentaries on the Law of Bailments*, 8th edn. Boston, MA: Little Brown & Co.

Sullivan, Paul. 2018. To Rent or Buy? Weighing the Options. *New York Times* 4F (18 November 2018).

Super, David A. 2011. The Rise and Fall of the Implied Warranty of Habitability. 99 *California Law Rev*. 389–463.

Swadling, William. 1998. The Proprietary Effect of a Hire of Goods. In Normal Plamer and Ewan McKendrick, eds., *Interests in Goods*, 2nd edn. 491–526. London: LLP Reference Publishing.

Tiffany, Herbert Thorndike. 1910. *Law of Landlord and Tenant*. St. Paul, MN: Keefe-Davidson Co.

Tzuo, Tien. 2018. *Subscribed*. New York, N.Y.: Penguin Portfolio.

Tita, Bob. 2019. Deere Boosts Leasing Business. *The Wall Street Journal* B1 (15 October 2019).

The Economist. 2020. Special Report: Housing. *The Economist* (18 January 2020).

UCC. 2014–15. Foreword to Article 2A. In *Uniform Commercial Code: Official Text and Comments*. St. Paul MN: Thompson Reuters.

U.S. Census Bureau. 2019. Quarterly Residential Vacancies and Homeownership, Second Quarter 2019. https://www.census.gov/housing/hvs/files/currenthvspress.pdf.

U.S. SEC. 2003. *Report and Recommendations Pursuant to Section 401(c) of the Sarbanes-Oxley Act of 2002 on Arrangements with Off-Balance Sheet Implications, Special Purpose Entities and Transparency of Filings by Issuers*. https:/www.sec.gov/news/studies/soxoffbalancerpt.pdf.

Velsey, Kim. 2018. How Does Your Landlord Calculate Your Rent? *New York Times* (5 January 2018).

Vincent, Carol Hardy. 2017. *Federal Land Ownership: Overview and Data*. Washington D.C.: Congressional Research Service.

——— 2014. *Federal Land Management Agencies: Appropriations and Revenues*. Washington D.C.: Congressional Research Service.

Weidner, Donald J. 2000. Synthetic Leases: Structured Finance, Financial Accounting and Tax Ownership. 25 *J. Corp. Law* 445–487.

——— 2017. New FASB Rules on Accounting for Leases: A Sarbanes-Oxley Promise Delivered. 72 *Business Lawyer* 367–404.

West, Douglas S., Balder von Hohenbalken & Kenneth Kroner. 1985. Tests of Intraurban Central Place Theories. 95 *Econ. J.* 101–117.

White Clarke Group. 2017. Global Leasing Report: Continuous Growth and Bright Prospects for the Global Leasing Industry. *World Leasing Yearbook*. http://www.whiteclarkegroup.com/wp-content/uploads/2017/04/WCG-Global-Leasing-Report-2017.pdf.

Wolfson, Mark A. 1985. Tax, Incentive, and Risk-Sharing Issues in the Allocation of Property Rights: The Generalized Lease-or-Buy Problem. 58 *J. Bus.* 159–171.

Wu, Wei-Ming & Tsan-Hwan Lin. 2015. Selection Behavior of the Global Container Shipping Industry for Carrier-Owned and Leased Containers. 37 *Transport Policy* 11–19.